

The Rhine

♦♦ H. J. Mackinder ♦♦



THE RHINE







ROTTERDAM.

THE RHINE

BY

H. J. MACKINDER

ILLUSTRATED IN COLOUR AFTER
MRS. JAMES JARDINE
AND TWO MAPS



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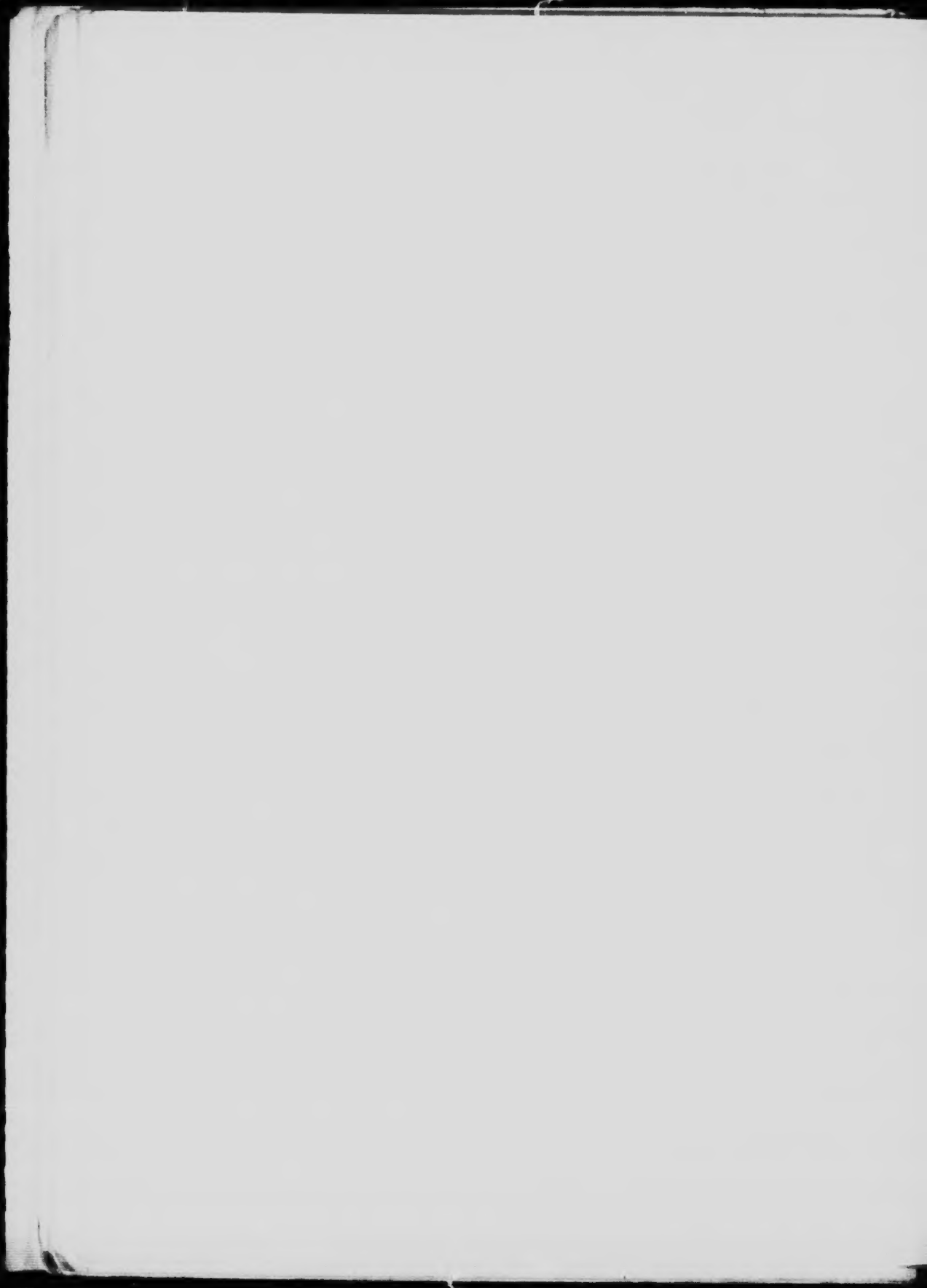
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THE RHINE



Chapter One

THE RHINE

IN the year 1840, when Louis Philippe was King of the French and Thiers his Prime Minister, the fear of a great war ran through Europe. Mehemet Ali, Khedive of Egypt, had built a fleet and equipped an army, wherewith he threatened the stability of his Suzerain's throne at Constantinople. The Powers were divided by the emergency, for with the acquiescence of Vienna and Berlin, Russian troops were in occupation of the shores of the Bosphorus. France objected to this on behalf of her friend, the Khedive. England also objected, but to her the Franco-Egyptian remedy for Levantine disorder appeared almost as dangerous as the Russo-Turkish. The Tsar saw his opportunity, and recalling his troops from the Bosphorus, drew England to his side for the coercion of the victorious Khedive. France was now faced by the same league of Powers by which she had been conquered in 1814.

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With a thrill of anger her people prepared for war, but though Palmerston and the Tsar Nicholas had been the movers against her, it was the prospect of war on the Rhine which roused the French martial spirit. To the surprise of Europe the German people, though still divided among many states, replied with a national movement. The entire German land rang with the words of Becker:

Sie sollen ihn nicht haben
Den freuen deutschen Rhein.

And de Musset replied for France:

Nous avons en votre Rhin allemand.

For the time being the threatened storm was dissipated. Louis Philippe refused to fight, the warlike Thiers fell from office, and the more peaceful Guizot succeeded him. But the currents of feeling which came to the surface in 1840 continued to run, and in 1854 the "Wacht am Rhein" was set to music, the song to which the Germans of 1870 were mobilized. It will be remembered that the Marseillaise, grandest of all war songs, was written in 1792 by Rouget de l'Isle, at Strasburg, on this same Rhine. At first it was known as the Song of the Army of the Rhine.

THE RHINE

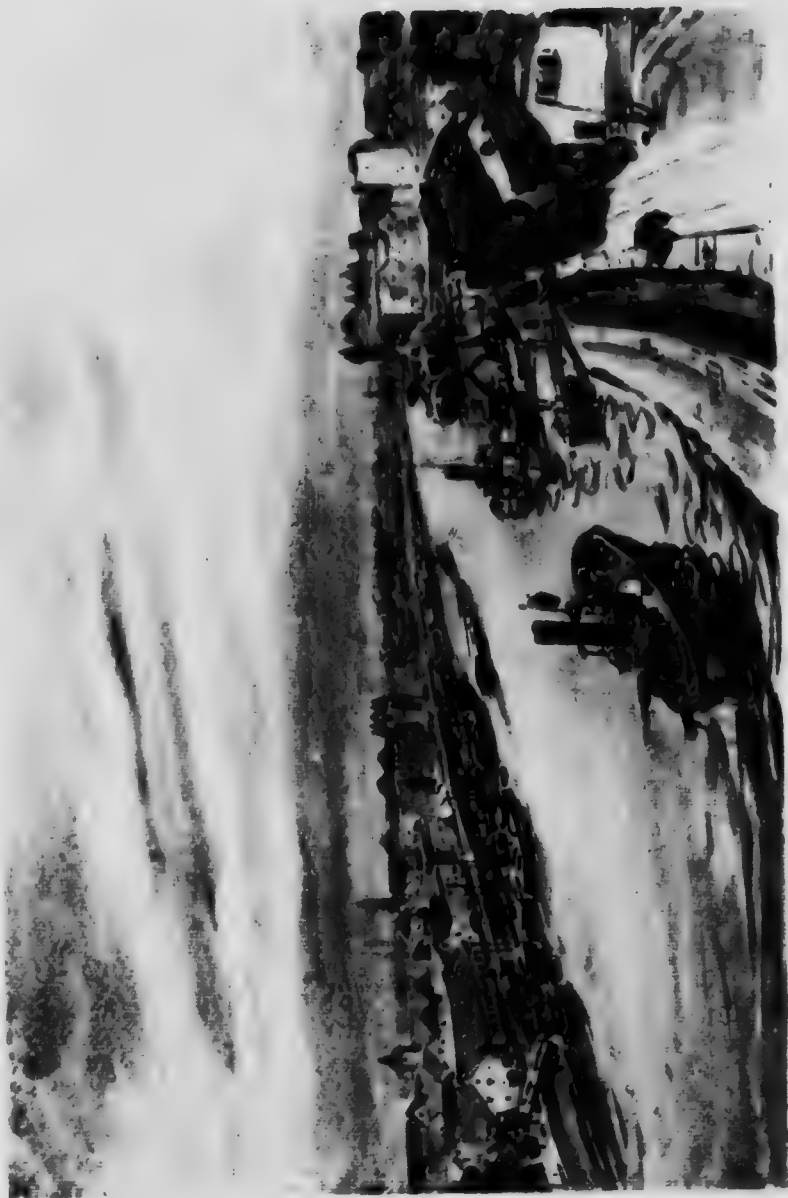
That the Rhine should thus be the gage of European battle is due both to geography and to history, for regarded from either point of view the Rhine is unique among the rivers of Northern Europe. The Vistula and the Oder are great streams, but they flow from comparatively low mountains, through monotonous plains frozen in the winter, to a tideless inland sea removed from the ocean of commerce. The Elbe, the Weser and the Seine are, it is true, tributary to the main ocean, but they rise only in the middle heights of Europe, and deep valleys separate them from the snowy Alps. The Rhine alone has its sources in the Alpine glaciers, and rolls a stream, large with ice water even in seasons of drought, to a delta of several mouths in a tidal open sea. As it flows with strength past Cologne, still two hundred miles from the sea, it is five hundred yards in breadth and thirty feet deep. By the Rhine alone are northern and southern Germany physically knit together; further eastward are the Prussians of Berlin, and the Austrians of Vienna, the Germans, that is to say, of the Elbe and of the Danube. The glens of the Rhine headstreams have made possible Switzerland; the marshy islands of its delta have been the nucleus of Holland. Parallel to the Rhine, but westward, runs the most

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significant division of Europe, the boundary between the Romance and the Teutonic languages.

It is not, however, merely its glacier-fed stream which gives importance to the Rhine, but also the character of the valley through which it flows. A map of Central Europe, showing conspicuously the parts which rise more than 100 metres or say 300 feet above the sea, will serve to reveal this fact. The edge of the higher ground in the south of the Netherlands runs from Brussels past Maastricht. Then a broad gulf of lowland, trumpet-shaped, enters southward past Cologne to a gorge beyond Bonn through which the Rhine emerges. Opposite to Cologne the edge of the higher ground advances northward past Düsseldorf to Duisburg, and then resumes its eastward trend.

Ocean steamers from across the Atlantic navigate the Rhine through the level Netherlands to Ruhrort and Cologne. From these points the traffic is by barge and tug-boat, but not by such barges as are seen on the canals of England, or even on the larger canals of France. The barges of the Rhine are of a thousand tons burden. Stemming the broad current they are towed in long strings past Cologne and Bonn, through the deep-cut gorge to Coblenz, and



THE PORT: MANNHEIM



THE RHINE

again through the gorge to Bingen, and then along the more open valley round the bends at Bingen and Mainz to Mannheim, at the confluence of the Neckar, in the very heart of Europe. Though a mastless port, Mannheim, as measured by the tonnage of the wares handled, is now one of the great ports of Europe.

So deeply is the Valley of the Rhine eroded into the high ground of Central Europe, that Mannheim stands only 300 feet above the sea. From Bingen nearly to Bonn the valley is cut as a gorge through broad uplands of schistose rock, the average level of whose surface is some 1,500 feet above the sea, though the river falls from only 250 feet at Bingen to 150 feet at Bonn. The green water, at one point more than seventy feet deep, here flows rapidly between dark cliffs and steep, vineyard-clad slopes.

Above Bingen the whole scene changes. The valley becomes a hill-edged trough some twenty miles across. From the raised banks of the river meandering in the sunken, fertile plain, the faces of the highlands are visible on either hand. At Breisach, midway from Strasburg to Basle, the level of the strip of lowland is just over 600 feet high, while the dark, wooded mountains of the Black Forest and of the

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Vosges rise on either side to summits of 4,000 feet and over. The head of this trenched valley is at Basle, more than 500 miles from the sea; but the descent of the river within it is just at first somewhat steep and the stream too rapid for navigation, since Basle is at a level of over 800 feet.

The lower reaches of some of the chief tributary valleys are also less than 600 feet above the sea—that of the Neckar nearly to Stuttgart and that of the much-bent Main to beyond Würzburg. The valley of the Lahn to Giessen, and of the Moselle to Metz are gorges of similar deep incision, while yet another valley, known as the Wetterau, offers a way from Giessen on the Lahn to Frankfurt on the Main which does not rise above 600 feet, although no river flows through it.

The valleys of these five rivers, the Rhine, the Neckar, the Main, the Lahn, and the Moselle, together with the Wetterau, are etched into a tableland, whose high surface is relatively exposed and infertile. The sheltered bottoms on the other hand have the most fruitful soils in Germany, and are densely peopled. The contrast was already established in Roman times, when the Agri Decumates were occupied beyond the Rhine frontier, and a line of en-

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trenchment was thrown up, known to-day as the Pfahlgraben, to protect the settlements along the Neckar, and on the lower Main, and in the Wetterau. Thus has the Rhine shaped history, not merely



by offering a way from north to south, but also by concentrating a rich agricultural population in the midst of the early wilderness.

If the Scheldt and the Meuse be deemed Rhine

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tributaries, as they should be for most purposes, since the mouths are separated only by recent deltaic islands, then the Rhine basin, Switzerland excepted, forms a great quadrilateral set obliquely in the map of Europe. One side is the coast of Belgium and of most of Holland. Two other sides are lines striking inland in roughly parallel south-eastward direction, the one just within France, round the sources of the Scheldt, Meuse and Moselle almost to Basle, the other through the midst of Germany outside the sources of the Lippe, Ruhr and Lahn, to the source of the Main, almost within Bohemia. The quadrilateral will be closed by the fourth side, a line from the Main source, outside the Neckar sources, almost to Basle. But here, at the southern angle, where the second and fourth sides should intersect, the Swiss Rhine enters through the slender space that is left between the head streams of the Danube flowing away to the Black Sea, and of the Doubs, which is tributary to the Rhone, and therefore to the Western Mediterranean. The Rhine basin is, as it were, nipped at Basle, between the invading Danube and Rhone basins. Southward, as an annex to the otherwise quadrilateral Rhine area, is a great bunch of some 500 sources high in the Swiss Alpine valleys.

THE RHINE

By the Germans the Swiss Rhine is viewed apart, and for them the Upper Rhine flows from Basle through the open valley to Mainz and Bingen, the Middle Rhine from Bingen through the gorge to Cologne, and the Lower Rhine from Cologne over the plain to the sea.

The theory that the Rhine is the "natural" frontier of France was bequeathed to Frenchmen by the Emperor Augustus. It inspired the policy alike of the Bourbons and of the Directory, yet can obtain little authority from history, either ancient or modern. Augustus, it is true, fixed the imperial boundary at the Rhine, and divided Gaul into four provinces, Narbonensis, Aquitania, Lugdunensis and Belgica. But before his death two new provinces, the Superior and Inferior Germanies, were carved out of Belgica, both therefore westward of the Rhine. The one contained Strasburg and Mainz, the other Cologne and Aachen. Somewhat later the frontier was advanced, as we have already seen, eastward of the Rhine, so as to include the fertile valleys of the Neckar and of the Lower Main, and to this day the trenched Pfahlgraben remains to attest the fact that, except for a short preliminary period, the Rhine was the Roman frontier only from Cologne downward.

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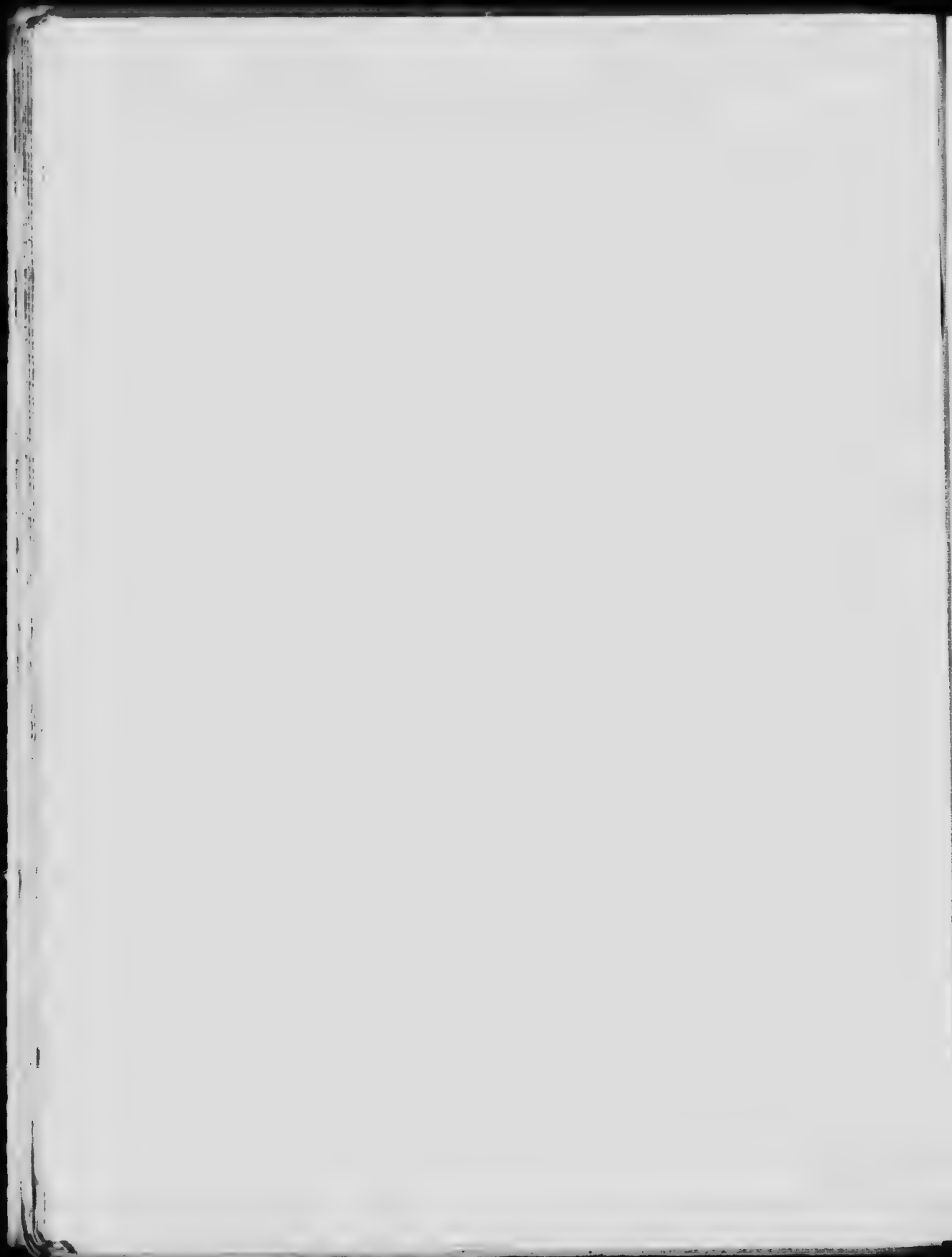
In the Netherlands, moreover, the boundary was marked, not by the existing Waal or Lek estuaries, but by the Old Rhine, the sorry ditch which to-day traverses Utrecht and Leyden.

When the Roman organization broke down, and the Frankish or German dominion spread during several centuries from the border of Bohemia to the border of Brittany, it must have appeared that so far from being a national frontier, the Rhine and the Rhine basin were destined to be the metropolitan features of a united Northern Europe, comprising the whole of the unbroken plain which extends from the Pyrenees by the oceanic shores to the Baltic. Carl der Grosse or Charlemagne, for he is the heroic founder alike of Germany and France, made his palaces at Aachen and Ingelheim, neither of them far removed from the left bank of the Rhine. His wars, however, were on distant rivers, on the Weser, the Danube and the Ebro.

After the death of Charlemagne there was no one left who could bend the bow of Ulysses. By a series of family arrangements and rearrangements extending over the greater part of a century, the Frankish realm was subdivided for purposes of rule among the members of the Carling family. But the owner-



UTRECHT.



THE RHINE

ship of the Rhine land appears in each division to have marked a certain primacy. By the Treaty of Verdun in the year 843 Francia in the wide sense was severed into three belts. The west was called Carolingia, for it was ruled by a King Charles. It spread from the Spanish slope of the Pyrenees to the Flemish Scheldt within the modern Belgium, but did not include the basin of the Rhone. The east was the German Kingdom, for there the people as well as the rulers were of Teutonic race. Between these two, Carolingia and the Regnum Teutonicum, there remained a far-reaching territory to be known as Lotharingia, after its ruler, Lothair. From the mouths of the Rhine in modern Holland it spread southward through Belgium and the Rhine land, and through the modern Lorraine to the basin of the Saone and Rhone, then called Burgundy, and on still southward over the Alps so as to contain all northern Italy, Rome included. According to this division, the West and the East, the France and the Germany of the modern map, were thought of as sub-kingdoms of an Empire of which the metropolitan districts, under the immediate rule of the Emperor, were ranged through the centre from the northern capital, Aachen, to the southern capital, Rome.

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The final division of the Empire of Charlemagne was made in the year 887. It was a division into four instead of three Imperial Kingdoms. They were Carolingia, Germany, Burgundy, and Italy. Carolingia retained the boundaries fixed at Verdun, but the Lotharingia of 843 now fell into three parts; the Italian Kingdom from Rome to the Alps, the Kingdom of Burgundy in the basin of the Rhone, and the northern remainder, chiefly but not wholly to west of the Rhine, to which the name Lotharingia adhered. In the main this second Lotharingia coincided with the basins of the Moselle and Meuse, and with this restricted area passed to the German kingdom. Thus was the question opened which has disturbed the peace of Europe ever since. Carolingia, which grew to be France, forgetful of her Teutonic origin, has laid claim to the inheritance of "All Gaul," and therefore to the Rhine frontier. Germany on the other hand, by virtue of the treaty of 887, has held to Lotharingia, and has regarded as rightfully hers all the Rhine basin up to the western divide towards the Seine.

There was this essential difference in the political importance of the Rhine in the Roman and in the Middle Ages. The Roman Empire was knit together

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by great military roads. The communications, in other words, within the Empire were essentially land communications. Under such conditions the water's edge, whether of the seashore or of an unfordable river, became a natural frontier. The Rhine, especially in its lower reaches, was a physical barrier of importance, and even along the Upper Rhine, where Rome held both banks, the territory which lay beyond the river was in the nature of a glacis, and the line of real military defence remained at the river itself. As a result the Rhenish cities of Roman foundation stood, for the most part, only on the western bank, as for instance Basle, Strasburg, Mainz, Coblenz and Cologne.

The barbarians, who overran the Empire in the fifth century, were no engineers, and in their time the Roman roads quickly fell into decay. In the Middle Ages, therefore, men had to ride to war "cross country" on horseback. For peaceful purposes, however, and indeed for war so far as in those rough days supply was thought for, the waterways, coast-wise and river-wise, were chiefly frequented. The boats employed were small, and streams were utilized for navigation which have become the mere ditches and sewers of modern Europe. The great rivers from

THE RHINE

being the frontiers of Rome became the central arteries of mediæval life. To the main streams descended on either hand tributary boatways, so that the most natural frontiers came to be the divides which separate river basins. Except in Flanders the frontier between France and Germany, for long after the Treaty of 887, coincided approximately, although not exactly, with the divide between the waters flowing by Moselle and Meuse north-eastward to the Rhine, and those flowing by Oise and Marne south-westward to the Seine. Thus it was that for reasons of practical convenience, Lotharingia, being within the Rhine basin, fell "naturally" to the German kingdom.

The earlier Germany extended only to the Elbe. It included the sites neither of Berlin nor of Vienna. Essentially it consisted of the lands occupied by four great kindred tribes. In the north reaching in Westphalia not quite to the Rhine, but on the other hand spreading in Holstein just beyond the Elbe, were the Saxons or Low Germans. The central feature of this country was the river Weser. In mid-Germany along the river Main, and from the mouth of the Main down the Rhine almost to the sea, and from the Rhine for some distance up the Meuse and up the Mo-

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selle, were the Franks or Middle Germans. In the south, along the Upper Rhine and on the uppermost Danube, were the Alemanni or Swabians, and eastward of them along the Danube, towards Hungary, were the Bavarians. A sub-tribe of the Saxons, the Frisians, dwelt along the marshy shores of the North Sea, from the Rhine mouths eastward. The territory of the Alemanni, which included the land of Alsace to west of the Rhine, in the tenth century became the great Duchy of Swabia, at which time also Duchies of Bavaria and Saxony arose as other feudal divisions of the German kingdom. There was a Frankish Duchy too, but this was not equivalent to the whole area occupied by the Frankish race. It lay chiefly eastward of the Rhine, but extended to the left bank at Mainz, where it included the territory immediately within the Rhine-bend, now apportioned between Hesse and the Palatinate of Bavaria. The river Main, and the Rhine in the reaches between Mainz and Bingen, was the vital artery of the Frankish Duchy. The remainder of the Teutonic Frankland formed Lotharingia.

The Germany thus constituted of Saxony, Francia, Bavaria, Alemannia and Lotharingia, though it contained the Weser and the Upper Danube, was in the

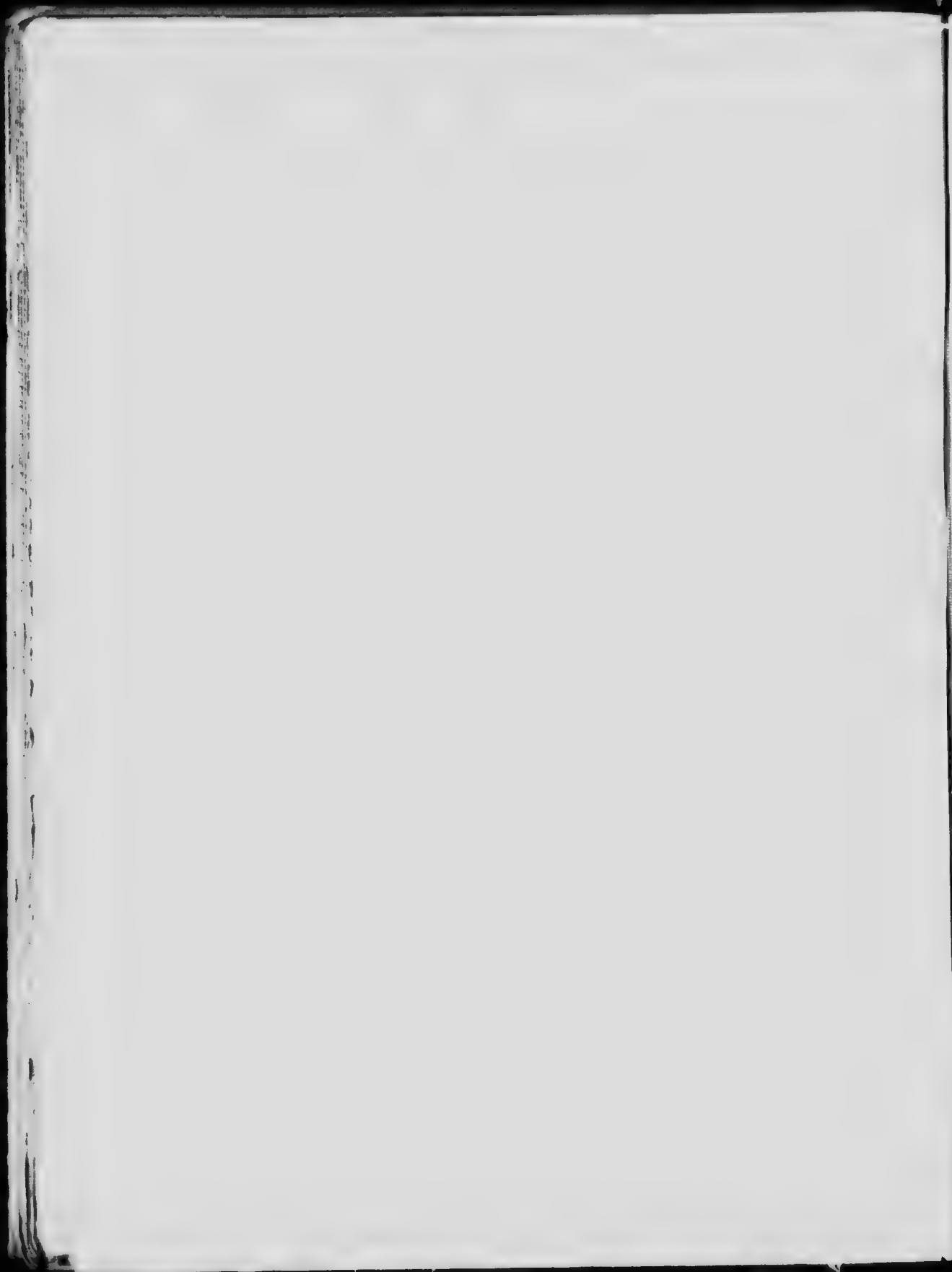
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main a Rhenish State, bound together by Rhenish waterways from the south almost to the north and from the east to the west. Had a permanent capital arisen on the Rhine for a heart and a brain of the German nation, as London rose on the Thames and Paris on the Seine, the whole course of European history would have been other than it has been. But Germany was broken by the feudal system into jealous fragments, and the functions of a capital were shared between various cities, most of them, it is true, in the Rhine land. The Emperors were chosen at Frankfurt, crowned at Aachen, and buried at Speyer. They belonged to the Saxon family in the tenth and eleventh centuries, to the Franconian family in the eleventh and twelfth, and to the Swabian family in the twelfth and thirteenth. Meanwhile and afterwards the greater feudal units were divided and subdivided, while German interest and power were engaged chiefly in eastern colonization among the Slavs and the Magyars. In other words, the causes were in action which made Berlin and Vienna rival German capitals and left the Rhine land open to attacks from Paris.

These causes were both geographical and political. A glance at the map will show that in western or



THE MARKET PLACE, MAINZ (MAYENCE)



THE RHINE

Rhenish Germany there is a certain duality, southern and northern, which corresponds in some degree to the eastern duality marked by Vienna and Berlin. From their Alpine sources the head streams of the Rhine gather into a single channel at the Swiss Coblenz. Thence the Rhine flows for some thirty miles westward to Basle, and there bending northward and gradually north-north-eastward enters what the German geographers describe as the Upper Rhenish "Low Plain" (Tiefebene), a tract nearly 200 miles in length from Basle to Mainz and 20 miles in breadth, depressed in the very centre of Europe far below the level of the surrounding uplands. Near the northern end of this long strip of sunken plain the river receives from the east two considerable tributaries, the Neckar and the Main, and then from the confluence of the Main at Mainz it swings round to a south-westerly direction, which it maintains for a distance of about twenty miles to the town of Bingen.

The steamboat passenger descending the river will here see beyond the rich vineyards on the northern bank a range of considerable mountains, known as the Taunus, which draw gradually nearer to the river. At Bingen he will find that the river turns sharply

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northward and enters a gorge in the Taunus range, which on the left bank is named the Soonwald and the Hunsrück. The mouth of the gorge at the Binger Loch has a swirl of rapid waters, for there is an island in the channel and reefs stand out from the lofty banks. The stream is narrowed to a quarter of its previous width, and at the same time grows deeper. Even to-day careful navigation is needful at this point, although the passage has been gradually widened and cleared since Roman times.

The Taunus and Hunsrück mountains are the south-eastward edge of a broad belt of upland, known to the German geographers as the Rhenish Schist Mountains, for they are chiefly made of dark and hard slaty rocks. Although commonly described as mountains, these uplands form, in fact, an undulating, somewhat desolate plateau with an average elevation of 1,600 or 1,700 feet, but in the south they rise in the Taunus and the Hunsrück to a marginal ridge whose summits are 3,000 feet above the sea, and 2,800 feet above the level of the Rhine, flowing at their southern foot. Right through this plateau, trenched down to 200 feet above the sea, runs the gorge of the Rhine, and in the bottom of the gorge, with a strong green current from the southern glaciers and forests,

THE RHINE

flows the mighty river. On either side are steep slopes whose dark soil is held in place by terrace walls and planted with vineyards. Here and there a precipice rises from the water's edge, as at the famous Lorelei, and gives no chance for cultivation. At the foot of the Lorelei the water is nearly eighty feet deep. Here and there, also, a rocky ledge placed high on the gorge brink has offered a site for a castle now in ruins, and at other points a little flat at the mouth of some lateral torrent has offered space for a small town. From Bingen to Coblenz the direct length of the gorge measures some forty miles, but owing to several bends the distance, as measured along the river, is considerably greater. At Coblenz, where the Lahn and the Moselle join from tributary gorges to right and left, there is a small plain, but the gorge is renewed below, although for a shorter distance than above. Its northern exit is reached only a short way south of Bonn, some seventy miles to the north-west of Bingen. Bonn itself, as already described, is at the southern end of a gulf of lowland which advances southward along the Rhine. In other words the slate hills retreat here from the immediate banks of the river, but continue to bound its valley at a distance of a few miles as far

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as the latitude of Cologne on the west, and as far as that of Essen on the east.

The whole breadth of the Rhenish Schist Mountains from the Taunus to Essen is considerably more than 100 miles, and from the Hunsrück to Aachen it is very nearly as much. South-westward from Cologne the upland extends for more than 150 miles until it ends in the salient promontory of the Ardennes within the frontier of modern France. North-eastward from the right bank, it extends for fully 100 miles to the sources of the Ruhr. Laid, therefore, upon the map of England the Rhine Schist Upland would spread from Great Yarmouth to Taunton, and the breadth of it from London to Leicester. With the exception of the protected and deeply sunk gorges of the Rhine, the Moselle, and the Lahn, it has a bleak climate, produces little, and is thinly populated. In earlier times, when the wealth of its mineral ores was less exploited, large areas of it were almost vacant.

From Bonn, whose level is only a hundred and fifty feet above the sea, the valley gradually opens out, until at Aachen on the west and at Essen on the east it merges with a vast plain in front of the upland. Commencing in French Flanders and spreading through Northern Belgium, this plain includes the



THE LORELEI.

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whole of Holland, and then extends without a break through North Germany past Berlin into Russia. It is traversed by great navigable rivers, and the peoples which inhabit it have always had maritime interests. To south of the Rhenish upland, on the other hand, the peoples who live in the sunny valleys of the Upper Rhine and the Neckar and the Main are far removed from the oceanic shores. Close to them, moreover, are easy valley ways leading over into the basin of the Rhone and so to Marseilles, and over into the basin of the Danube and so to Vienna. Thus it has happened that geographical circumstance has held the Rhinelanders apart, those to the north of the gorges dwelling in the plain and interested in trade by sea, and those to the south cultivators of the valleys and continental in their interests.

But there were other causes which conspired with the physical causes to produce this division between south and north. The Franks, who held the central position among the tribes of Germany, remained a Teutonic people only in the valley of the Main and along the middle Rhine. In Lotharingia they mingled in greater or less degree with the Latinized population within the former Roman frontier. The very name of Lotharingia had, as we have seen, a

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mere accidental and personal and not a tribal origin. Thus the Frankish element in the German Kingdom of the Middle Ages was weakened and unfitted to play the dominant part. The centre being weakly held, the contrast between the northern Saxon and the southern Swabian and Bavarian elements in the kingdom was emphasized.

The lack of any sufficient national basis for the Lotharingian Duchy affected the issue in still other ways. Lotharingia early divided into Upper and Lower Duchies, respectively to the south and to the north of the Rhenish Schist Mountains. The later Duchy of Lorraine or Lothringen represents both in name and position the Upper Lotharingian Duchy. The Duchy of Brabant, containing Brussels, was the most important derivative from the Lower Duchy. The process of division and subdivision for family reasons of the five original Duchies continued through the Middle Ages, and indeed until the time of the French Revolution, but along the eastern frontier of the kingdom, towards the Slav and the Magyar, strong dynasties arose which, by fair means and foul, concentrated afresh under their rule whole groups of these little fiefs. Thus were gathered the broad though scattered territories on which the Haps-

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burgs at Vienna and the Hohenzollerns at Berlin based their rival powers. But along the Main and along the Rhine there was the threat of no external enemy to stimulate union, for at this time France was paralyzed by her wars with England. Nor in Lotharingia was there any strong tradition of a former national existence as among the Saxons and the Bavarians. The political confusion due to the breakdown of the feudal organization was therefore nowhere more marked than in the basin of the Rhine.

Yet another cause operated along the Rhine to prevent territorial reconstruction. The Roman Empire was already Christian when it was overwhelmed by the pagan Germans, and the Roman frontier on the Rhine continued as a boundary of Christendom when it had ceased to count for purposes of temporal rule. Very naturally, therefore, the bases of missionary effort among the Germans were found in the bishoprics immediately west of the Rhine. Three of these, Köln, Trier, and Mainz, rose to the rank of Metropolitan Sees, and in after times became princely Archbishoprics. Their more than local significance is marked by the fact that each has also a French name—Cologne, Trèves, Mayence. From Cologne the missionaries descended the Rhine to work among

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the Frieslanders, and to settle in the wake of the armies of Charlemagne among the Saxons of the northern plain. From Trier their boats followed the Moselle to Coblenz and then ascended the Lahn. Two considerable ecclesiastical provinces were thus organized. But the Archbishop of Mainz had jurisdiction over a far greater area. By the Wetterau, the Main, the Neckar, and the Upper Rhine, the missionaries penetrated north, east, and south, as far as the sea, Bohemia, and the Alps. Thus the organization of the Church centred for all Germany in Lotharingia and in that corner of the Teutonic Francia which lay westward of the Rhine. So it came about that the Church was strong precisely where the temporal powers were most divided and weakest.

As the centuries went by, the Archbishoprics and Bishoprics of the Rhenish basin established their temporal rule in parts of their several dioceses. Nearly a score of petty ecclesiastical principalities arose—Utrecht, Liège, Münster, Paderborn, Köln, Trier, Mainz, Würzburg, Bamberg, Worms, Speyer, Strasburg, Basle, Wetz, Toul, and Verdun—nearly all placed on the Rhine or its tributaries. Union was possible among these ecclesiastical states neither by failure of succession nor by marriage, and thus amid

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the kaleidoscopic changes of the map of the German principalities during ten centuries, these states remained fixed, increasing at times in area, but rarely diminishing or merging.

In two districts only of the Rhine basin were the tendencies to disunion overcome. The result was still further to emphasize the contrast of south and north. In the south, in the Alpine valleys, at the sources of the river, a group of peasant communities freed themselves from the feudal control of the Hapsburgs and leaguings themselves together made Switzerland. In the north by a more complicated history the Duchies and Counties of the Netherlands were first gathered under the single rule of the House of Burgundy, then transferred by marriage to the House of Hapsburg, and finally divided into two states, the modern Holland and Belgium, as the result of the Dutch War of Independence. Thus it happened that the Swiss at the one end of the Rhineland and the Dutch at the other, utilizing natural advantages, separated themselves from Germany, and so definitely closed the possibility of founding one of the Great Powers of Europe on the most important of the rivers flowing to the ocean.

The federal idea on which Switzerland and the

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Netherlands were based had been originated by the merchant cities of Germany. In the north, on the shores of the Baltic and North Seas, the Hanseatic League, trading to Russia, Scandinavia, and England, has left its mark on the map to the present day in the shape of the three "Free" cities of Lübeck, Hamburg, and Bremen. For a time the Rhenish cities, from Basle to Cologne, under the lead of Mainz made a similar bid for federal order and power, but of this all traces have disappeared. Mainz went under in struggle with her own Archbishop.

The bitter contests of religion which commenced with the Reformation had the effect of further increasing political confusion along the Rhine. Each petty despot, whether secular or ecclesiastical, treated the souls of his people as chattels, and fought with his neighbours in obedience to his own conscience or interests. Meanwhile France had become a great and centralized power, and was ready when she had settled her own religious difficulties to intervene in the crisis of the German struggle known as the Thirty Years' War. Her policy was to keep Germany divided especially towards the Rhenish border, and with this object her Cardinal statesmen, Richelieu and Mazarin, intervened cynically on the Protestant



THE SCHLOSS, HEIDELBERG

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behalf. Bit by bit, steadily approaching the Rhine, she absorbed the fragments and digested them into France. In the sixteenth century the process began by the annexation and secularization of the Bishoprics of Toul, Verdun, and Metz. In the seventeenth century, under the Louis XIV., came the "reunion" of Alsace, and the terrible devastation of all the country on the Middle Rhine, and especially of the palatinate of Heidelberg. In the eighteenth century these acquisitions were consolidated by the addition of the Duchy of Lorraine. Mainz fell to the French as the first result of the wars of the Revolution, and by the Treaty of Lunéville the Rhine became the frontier almost from end to end, and France for the first time was coterminous with Roman Gaul. The Ecclesiastical States were swept away. All established boundaries vanished from the map, and a division into Departments was substituted. The Code Napoleon became the uniform law as well in the German- as in the French-speaking districts. Thus drastically was the confusion of the ages removed.

When Napoleon fell, the Powers still feared France. Their mutual jealousies prevented them from setting up a united Germany, but they established a few comparatively great lands along the

THE RHINE

Rhine frontier of France, thus accepting for their own better defence the necessarily destructive and subsequently constructive work of the Revolution and Napoleon. There emerged the familiar map of modern Central Europe. In South Germany were recognized three considerable states, Bavaria, Württemberg, and Baden, the last named with the Rhine as its frontier from near Constance to near Heidelberg. Lotharingia fell into two parts once more, Lorraine being left to France together with Swabian Alsace, while Belgium and the Prussian Rhineland were removed from her rule.

Two generations later, when the third Napoleon occupied the throne of his uncle, and Bismarck had built up a Prussia continuous from Trier on the French frontier to Königsberg on the Russian frontier, German soldiers were again assembling on the Rhine. Between 1866 and 1870 there had been tension in the political atmosphere of Europe, because Napoleon wished to rectify his frontier in such manner as to balance the new strength of Prussia and Italy. Again and again Benedetti, his ambassador in Berlin, reported against projects for an advance to the Rhine north of Alsace. Cologne and Bonn were recognized as difficult of attainment, but Bismarck



STRASSBURG.

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played with suggestions which would have made French now Mainz and Oppenheim and Kaiserslautern, and now Saarbruck and Trier. The Rhenish ambition of Napoleon, thus drawn out, was the anvil on which Bismarck welded the treaties which bound the South German States, at war with Prussia in 1866, into the league which overcame France in 1870. In the result the French frontier was once more thrown back from all contact with the Rhine.

Considered in the light of the physical and historical facts which have thus been sketched, the Rhine basin subdivides naturally into eleven regions. In the Alps there are two groups of sources, for the mountains of Switzerland form two parallel ranges more or less separated by a continuous valley. In south-eastern Switzerland, in the Canton of the Graubünden or Gisons, the Rhine is derived from the Rhaetic (1) or hinder of these ranges, and it then (2) flows round the eastern end of Switzerland and through the Lake of Constance, at one time known as the Swabian Sea. In this, the second part of its course, it may therefore be conveniently described as the Swabian Rhine. Before leaving Switzerland, the main stream is joined by a great tributary, the Aar, which collects the (3) sources of the Helvetic

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or front range of the Alps. At Basle the Rhine enters Germany and traverses (4) its upper valley to Mainz and Bingen, becoming navigable (5) for large vessels at Mannheim. On either hand of this section of the course are tributary basins, to the right (6) those of the Neckar and the Main, to the left (7) those of the Upper Moselle and the Upper Meuse. But the Neckar and Main are far more intimately connected with the Upper Rhine because they enter the main river above the gorge, whereas the Moselle and Meuse plunge into gorges in the Schist upland which are similar to that of the Rhine itself. Next we have the gorge (8) of the Middle Rhine through the Schist upland to Bonn, and then the German plain is crossed (9) to the bifurcation of the river on the Dutch frontier. The land of Upper Lorraine, drained by the Upper Moselle and Upper Meuse, is connected with the gorge of the Rhine at Coblenz by the gorge of the Lower Moselle and at Bingen by the valley of the Nahe. The Meuse, however, completely traverses the Schist upland, and emerges (10) independently on the lowland beyond. There it approaches the Scheldt, and with that river drains the land of Lower Lotharingia or the modern Belgium. Finally the Rhine, the Meuse

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and the Scheldt constitute (11) by their joint delta the lowland of the Netherlands Proper, approximately the modern kingdom of Holland. Our survey of the Rhineland will therefore be divided according to the following scheme:—

The Swiss Basin	{	The Rhætic Rhine The Swabian Rhine The Aar
The Upper German Basin	{	The Upper Rhine above Mannheim The Main and the Neckar The Upper Rhine below Mannheim
The Middle German Basin	{	The Moselle and Upper Meuse The Middle Rhine
The Basin of the Netherlands	{	The Lower German Rhine The Lower Meuse and the Scheldt The Delta

Chapter Two

THE RHAETIC RHINE

THE remotest sources of the Rhine are in ancient Rhaeti, in the heart of the Alps, midway of their length from the Mediterranean to the Danube. Rhaeti is to-day divided between Switzerland and Tyrol, and it is within Switzerland, in the Grisons or Graubünden, the largest and most generally rugged of the cantons, that some 200 glacier-fed streams gather, near Ragatz, to form a broad green torrent, known from prehistoric times by the name of Rhine. Other streams of the Grisons go to make the Inn river of the Engadine, which is tributary to the Danube. A few valley heads there are, moreover—the Munster Thal, the Val Poschiavo, the Val Bregaglia and the Val Mesocco—which send their drainage southward to Italy and the Adriatic. Cursorily regarded on the map, it would appear, therefore, that the territory of the Graubünden or Gray Leagues has a merely ar-



CHUR (COIRE): THE BISHOP'S PALACE AND THE CATHEDRAL SQUARE

THE RHAETIC RHINE

bitrary character and no obvious relation to the facts of physical geography.

Along the north-westward border of the canton are two parallel features, a mountain ridge and a long valley. The ridge, which extends from Ragatz to the Oberalp Pass, has snowy peaks—the highest of them the Tödi—which features from 9,000 to nearly 12,000 feet, and there is no pass of less than 7,000 feet. Except for a short distance at the eastern end, the water parting of this ridge forms the frontier of the Graubünden. Northward the valleys flow away from it down the outer slope of the Alps to the Lakes of Lucerne and Zurich, but southward there are steep descents, seamed only by short torrents, and these drop to the great longitudinal valley of the Bündler Oberland, through which flows the Vorder Rhine. Dissentis, in the head of this valley, only ten miles from the Oberalp Pass, is already less than 4,000 feet above sea level, and Chur, thirty miles further down, is less than 2,000. Thus, the north-western boundary of the Grisons is a rampart more than a mile high, which can be traversed only on foot and at the cost of a long day.

Further eastward a like barrier, the Rhaetikon, strikes north-westward from the Silvretta massif for

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thirty miles, and beside it, within the Graubünden, is a valley, the Prättigau. The Rhaetikon has peaks of 9,000 feet and passes of 6,000; while Klosters, the village in the head of the Prättigau, is less than 4,000 feet above the sea. The Rhaetikon is the boundary of the Graubünden and of Switzerland towards Austria.

The Tödi and the Rhaetikon ranges thus approach one another from the south-east and from the south-west at Ragatz, north of Chur, and behind them the valleys of the Bündner Oberland and of the Prättigau similarly converge, and send the Rhine waters northward between the range ends. As it flows past Ragatz the Rhine is at a level of only 1,700 feet, while the peaks on either hand are of 9,000. The opening is threaded southward as far as Chur by a strip of green vineyards.

A palisade of glittering peaks and notched passes extending in a semicircle to the south from the Silvretta in the east to the Oberalp in the west, completes the circuit of the basin. The torrents springing from the glaciers of these peaks gather from the south-east, the south, and the south-west, to escape by the Rhine portal at Ragatz, and the mountain paths which thread the passes descend to Chur fan-wise. Ober-

THE RHAETIC RHINE

alp, Lukmanier, Greina, Bernardino, Splügen, Duana, Septimer, Julier, Albula, Scaletta, Fluela—these are the historic names of the Rhaetic Passes, not one of them less than 6,000 feet.

Within this boundary of glacial heights, the Rhine basin of the Graubünden is a wilderness of broad ridges, a little lower than the eternal snow. The sculpture, however, is in high relief only in the north; in the centre it is in bas-relief, for here the valleys lie high, etched only a little into the plateau of encompassing summits. The Davos Valley and the Rhinewald lying parallel to the Oberland Valley present long, almost level, pastoral stretches at an elevation of some 5,000 feet. Turning obliquely northwards their streams converge, and at the same time fall rapidly downward through clefts, the Via Mala and the Schyn, until their tumbling waters emerge from the gorges and combine at Thusis. Thence they flow once more through an open valley, but now at a low level, and through richly cultivated ground. The Graubünden is, in fact, built in two tiers.

The ways which radiate from Chur by the low valleys are carried with much engineering effort up the gorges into the high valleys, and then over the marginal passes and glaciers to descend into the

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basins of other rivers. But here we must distinguish, for there is a great contrast in the destination



The Gränbünden

R. Ragatz	1 Oberalp	7 Maloja
C. Chur	2 Lukmanier	8 Julier
Re. Reichenau	3 Greina	9 Albula
T. Thusis	4 Bernhardino	10 Flüela
VM. Via Mala	5 Splügen	11 Valserberg
	6 Septimer	

of these routes. Those which go to the south-west, from the Lukmanier to the Septimer, run rapidly

THE RHAETIC RHINE

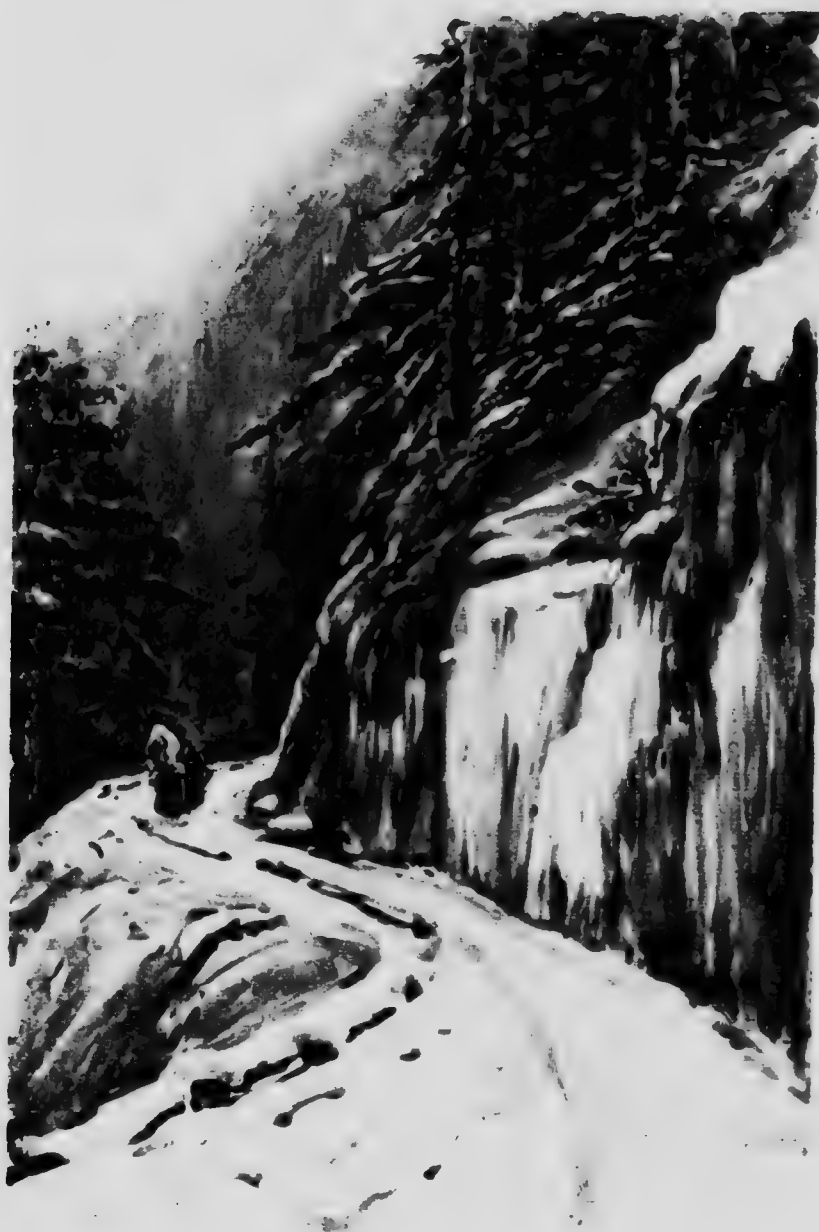
downward into deep Italian valleys, whether belonging to the Swiss Canton of the Ticino or to the Italian Kingdom. South-eastward, on the other hand, from the Julier to the Fluela, the roads over the water parting between the Rhine and the Danube drop only a little to the Engadine, which is a pastoral, high-lying valley similar to the Devos Valley and the Rhine-wald. Only beyond the Engadine does the Bernina Pass lead down to Italian levels, through chestnut woods to the vineyards in the long bottom of the Val Tellina. To the north-east, where the Engadine quits the territory of the Grisons and enters Tyrol, it descends through the Finstermünz gorge to levels comparable with those of the Rhine below Thusis.

Here is the secret of political unity in the Graubünden. It is a land of high-lying pastoral valleys inhabited by a race of herdsmen who are cut off from the herdsmen of Switzerland proper by the Tödi ridge, and from the herdsmen of the Austrian Vorarlberg by the Rhaetikon ridge, while they are proudly separated by the free mode of their lives from the vineyardsmen of the deep Italian valleys draining to the Lago di Coma and the Lago Maggiore. The long dominance of the Grey Leagues of the highland over their lowland neighbours is recorded on the map by

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the fact that the upper reaches of several of the Italian valleys, the Val Poschiavo, the Val Bregaglia, and the Val Mesocco, still belong politically, although not by language, to the Grisons. Before the French intervened a century ago the Val Tellina also, and the district of Chiavenna were subject to the Grisons.

In a sense every source in the southern palisade of peaks has equal right to the title of Rhine Head. Long local custom has, however, consecrated as the main head-stream that which flows through the Rheinwald from the Adula massif, towering in the south-west corner of the Grisons high over the deep-cut Ticino valleys of the Italian slope. By a curious coincidence this massif alone, or almost alone, of the greater summits of the Alps, still retains its ancient name. It is the Mons Adulis of Strabo. The highest point, of more than 11,000 feet, is the Rheinwaldhorn, and at the foot of this, on the eastward slope, in an ice cavern at the end of the Zapport glacier, is the source of the Rhine. The issuing stream, thick with glacial mud, falls through a rocky gorge described by the peasants as Hell. Alongside, in the midst of the wilderness of ice and stones, there is a rise with a trace of vegetation, and this is known as



ON THE SPUGEN PASS

THE RHAETIC RHINE

Paradise. From Hell and Paradise the river flows north-eastward for twenty miles through the open Rheinwald valley to the ravine called La Rofna, in which, turning northward, it falls again rapidly. Punctuating the Rheinwald at a third and at two-thirds of the way from the Adula to the Rofna are two little villages, Hinterrhein and Splügen, raised a mile above sea level. From Hinterrhein a carriage road zigzags southward up to the Bernardino Pass, of more than 6,700 feet, and then descends to the Swiss Ticino. From Splügen another road leads over the Splügen Pass, nearly 7,000 feet in height, and so southward into an Italian valley. Within twenty miles of the Rheinwald villages these twin roads are down where Italian is spoken, in valleys hot with sunshine, trenched to depths only half a mile above the sea, where are chestnut and walnut forests, and presently vineyards and stone houses of a southern aspect. The Bernardino road was constructed by the Swiss Government to connect two of the cantons; the Splügen was built at the same time by the Austrian Government when it was ruler in Italy.

The peasants of the Rheinwald are of German speech, descendants of a colony brought in the twelfth

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century by the Emperor Frederick Barbarossa from the head of the Valais. They are believed to have entered their promised land by the Valserberg Pass which comes over from the north to the village of Hinterrhein. So, at least, is it inferred from the name Valser Rhine, which is tributary to the Vorder Rhine of the Bündner Oberland. The Rhine of the Rheinwald is the Hinter Rhine.

At the Rofna gorge the river leaves the open valley, and plunges through pine woods, over a cataract and down rapids, for a distance of some three miles, until it emerges in the open valley of Schams, where the people are Protestant, like the Rheinwalders, but speak the Romonsch tongue. A majority of the inhabitants of the Grisons speak Romonsch, a patois broken down from the ancient rustic Latin, but broken in the Rhaetic way, not the Italian. The Rheinwalders speak German because they are descended, as we have seen, from a colony posted to guard the passages into Italy. For military purposes there was not contrast enough between the Romonsch peasants and the Italian.

At the head of Schams, just where the Rhine comes out of the Rofna, there enters by a sister gorge the Averser Rhine, fed from a group of valleys whose

THE RHAETIC RHINE

heads are twenty miles southward. The valley of Avers is one of the most beautiful in all the Alps. Below, where it approaches Schams, in the part called Ferrara, it is inhabited by Romonsch speakers, but towards the head, above the gorges to which it is narrowed about midway up, are the villages of Cresta and Juf, whose inhabitants are German, descendants of another little colony brought in the thirteenth century from the Valais. Juf is said to be the highest village in the Alps. Thus two valleys at high level, both of German speech, the Rheinwald and Avers, meet from the west and from the south, and in the angle between them, flowing away south-westward, are the streams of two Italian-speaking valleys at low level. Through these valleys, descending southward, run the Splügen and Bernardino roads.

The valley of Schams, some five miles in length, ends in the celebrated gorge of the Via Mala, where the green river swirls downward between cliffs of black slate 1,600 feet in height, and at one point not ten yards apart. The pathway was formerly carried high over the grassy alp on the western brink, and so down to Thusis at the exit from the gorge, but in 1820, when the Swiss road over the Bernardino was constructed, a more level way was cut along the wall

THE RHINE

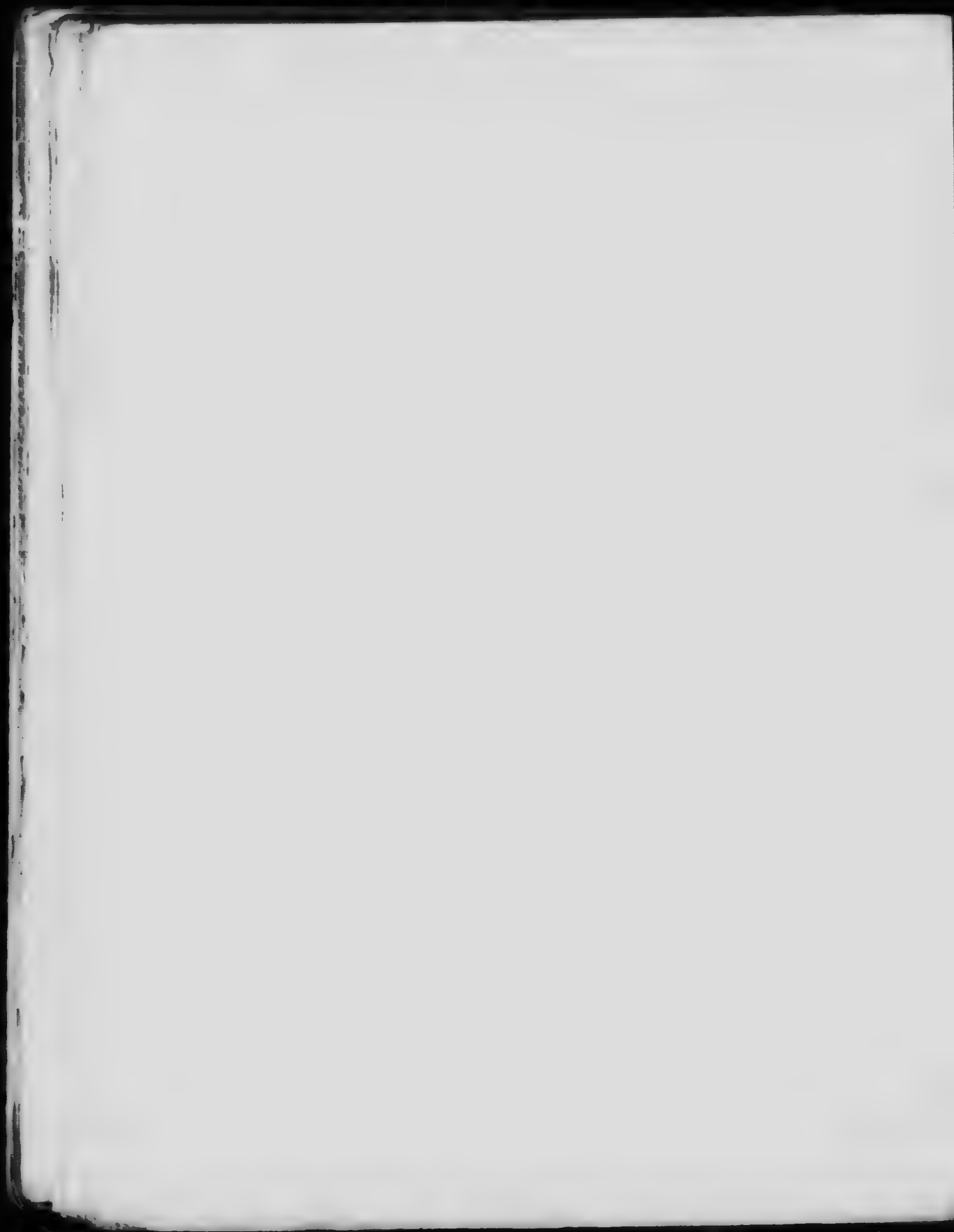
of the gorge itself, in such a manner that for a considerable distance it is actually overhung by the precipice.

At Thusis, a small tributary, the Nolla, comes from the left hand out of a short valley whose slaty soils are so rapidly yielding that after rain the Nolla flows past Thusis as a stream of inky black. The stream head of the Nolla valley is eating back into the mountains, and in time will doubtless cut a passage through into the adjoining Safier valley, whose stream it will rob of its sources, so that the Nolla will bear to Thusis more water, and the Safier will carry less to Trins.

Just below Thusis the Rhine receives from the right hand a tributary, the Albula, whose burden of water is as large as that of the main river. There is a remarkable symmetry in the basins of the Albula and the Hinter Rhine. The Albula comes down to Thusis through the Schyn Pass, a gorge as grand as the Via Mala and of like nature. Above the Schyn is a group of tributary valleys which correspond to those of Splügen and Avers. The Davos valley resembles the Rheinwald in its high-lying pastoral and open character. At the head of it, however, is no great snow-clad massif comparable to the Adula, but



THE GORGE OF THE VIA MALA.



THE RHAETIC RHINE

a deep notch leading over to Klosters in the Prättigau. In the opinion of the Swiss geologist Heim the torrents which converge from the east and the south to Klosters were once the headstreams of the Landwasser of Davos, and have been captured from it by the Landquart of the Prättigau, by a process similar to that now visibly at work in the case of the Nolla. The wind gap, as the Americans of the Alleghanies would describe it, through which runs the road from Klosters to Davos, is the dry abandoned valley of the now diverted drainage. Through this wind gap the railway to Davos has been brought up from Chur and the Prättigau.

The Engadine railway, more recently constructed, has been carried right across the Grisons from Chur by Reichenau and Thusis, through the Schyn Gorge to Tiefenkasten, and thence up the Albula valley and through a tunnel nearly four miles long into the Engadine at St. Moritz near the source of the Inn. A branch from Reichenau to Ilanz in the Bündner Oberland completes the metre-gauge mountain railway system of the Grisons, a system constructed for strategical reasons and for the service of the health resorts in the high valleys. The capital would hardly have been forthcoming on other grounds, for the Gri-

THE RHINE

sons has no wealth but its pastures and its forests, and the industrial life of Switzerland proper has as yet hardly touched it. The European railway system of broader gauge enters the Grisons from the north only as far as Chur.

Parallel with the upper valley of the Albula is that of its tributary, the Oberhalbstein Rhine. They join at Tiefenkasten, where the Albula is turning westward to the Schyn Gorge. Oberhalbstein is to-day aside from the main track of the tourists; but before the railway was constructed, and indeed since Roman times, it has offered the most direct way through Rhaetia from Germany to Italy. At the head of it is the Septimer Pass, leading over to the Val Bregaglia, which runs westward at the low Italian level to join the Splügen road at Chiavenna. Italian is the language of the Val Bregaglia, although the inhabitants are Protestant, and Italian is spoken even in the head of Oberhalbstein whose other inhabitants speak Romansch. The imminence of snowy slopes renders the Septimer Pass specially liable to the danger of avalanches; and the modern road, and, indeed, the more usual ancient mule track, turn aside near the head of the valley over the Julier Pass, 7,500 feet high, and so by a drop of only 1,500 feet into the lofty valley of

THE RHAETIC RHINE

the Engadine at Silvaplana. From Silvaplana the road returns westward over the Maloja Pass, and so circuitously into the Val Bregaglia.

In the Oberhalbstein Valley, high on either hand, at various levels, terraces have been traced which appear to have been cut into the slopes by the action of water. In places accumulations of gravel rest on these terraces, and the pebbles of which these are formed indicate by their rocks the source from which they were derived. By the study of these pebbles the great Swiss geologist, Heim, has come to the conclusion that the Oberhalbstein Rhine once flowed high above its present level, when as yet the valley was not trenched so deeply. The terraces and the gravel beds are relics of this former broad and lofty valley.

Northward of Tiefenkasten, but at a level of 2,000 feet higher, there is a broad depression in the mountains, which offers a way, in direct prolongation of Oberhalbstein, leading fifteen miles to Chur. The great road to the south from the Lake of Constance and from Chur to the Septimer and Julier Passes, runs not through the Schyn Gorge, but through this notch across the Heath of Lenz. Heim has shown that the Lenzer Pass is the dead, forsaken valley of the ancient high-level stream of Oberhalbstein, and

THE RHINE

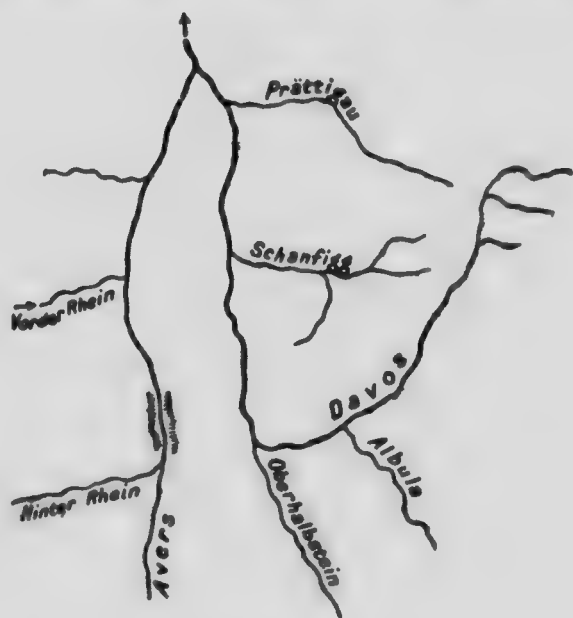
it will be noted on the map that the Rhine Valley northward of Chur prolongs the direction Septimer-Lenz-Chur. The Schyn Gorge was cleft comparatively late, and the Oberhalbstein river was diverted through it to make the circuit of Thusis and Reichenau to Chur.

The low valleys of the Grisons commence at Thusis, where the Hinter Rhine emerging from the Via Mala is joined by the Albula from the Schyn Gorge. High on the summit of a great cliff in the angle between the two rivers are the venerable ruins of the castle of Hohenrhätien, set in the strategical centre of Rhaetia, and possibly the origin of the name of the whole land, just as the castle of Tyrol above Meran in the Adige Valley gave its name to the whole land of Tyrol. To this castle of Hohenrhätien are attached the most ancient legends of the country. It is said to have been built by Rhaetus, the traditional leader of the Etruscans when driven out of Italy by the Gauls. Beside the castle ruin are the remains of a church, the oldest, as the most central, in the Rhaetic basin of the Rhine.

The Hinter Rhine continues below Thusis for a few miles through the open valley of Domschleg until at Reichenau it rushes at right angles into the Vorder

THE RHAETIC RHINE

Rhine coming from the west, and the joint river accepts the westward flow down the great longitudinal valley from the Oberalp to Chur. Precisely northward of the confluence of the Vorder and the Hinter Rhines is the Kunkels Pass, with an elevation of some

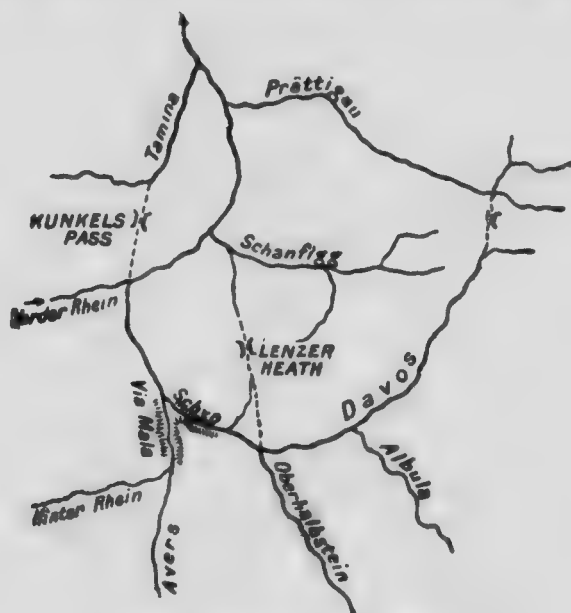


FORMER VALLEYS

4,500 feet, and beyond this the valley of the Tamina, which, running north-eastward to join the Rhine at Ragatz, severs the Calanda Mountain, some 9,000 feet in height, from the main Tödi range. It has

THE RHINE

been concluded that the Hinter Rhine when flowing at the higher, the Rheinwald, level once traversed the Kunkels Pass and the Tamina depression. At that time Ragatz and not Thusis must have been the point of convergence of the valleys of the Grisons. The



Note: Abandoned River ways

PRESENT VALLEYS.

gorge at Pfäfers in which the hot springs rise, has been trenched into the broad bed of the old valley. Thus the Averser Rhine, flowing northward past Thusis and Kunkels, once received from the west as

THE RHAETIC RHINE

tributaries both the Hinter and the Vorder Rhines; while the Oberhalbstein Rhine, flowing northward in a parallel valley past Tiefenkasten, Lenz, and Chur received from the east the Landwasser of Davos, which then originated in remote Rhaetikon sources now robbed by the Landquart.

The Vorder Rhine is a longitudinal river almost from its source to the junction with the Hinter Rhine at Reichenau. Its valley is bounded by the south face of the great mountain wall, which descends more gradually northward in the Cantons of Uri, Glarus, and St. Gallen. The Tödi, the highest summit of this range, is 500 feet higher than the Rheinwaldhorn of the Adula. The uppermost portion of the basin of the Vorder Rhine with the ancient Abbey of Dissentis in its centre, has short slopes also from the south, for close at hand are the headstreams of rivers flowing through Italian-speaking valleys to the Ticino and the Lago Maggiore. From Dissentis up the valley of the so-called Middle Rhine a road has been constructed over the Lukmanier Pass to connect the Vorder Rhine with the Ticino, as the Bernardino Pass connects the Hinter Rhine with it. But further eastward, both above and below Ilanz, the tributary southern valleys are longer, and descend not immedi-

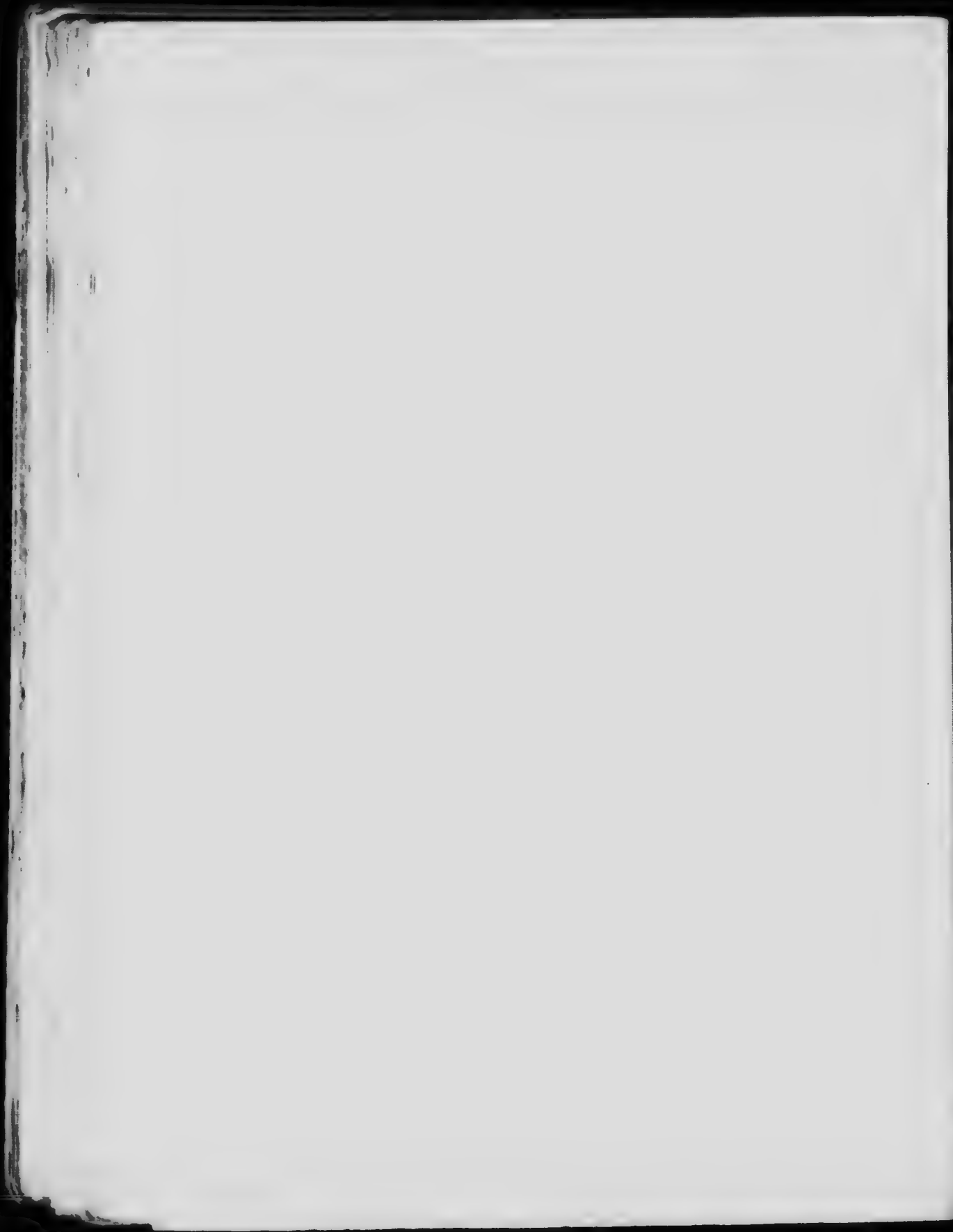
THE RHINE

ately from the brink overlooking the Italian slope, but from the northern edge of the Rheinwald.

At this stage it may be well to restate in somewhat more technical language, with the object of clearness, the scheme of the Rhaetic drainage of the Rhine. The map, in other words, must be made to speak its full meaning, which is orderly and not chaotic. First we must define the few special terms which are needful. The rocks of the Alps are arranged in hard and soft belts, just as timber is grained, and in the Graubünden the usual trend of the rock graining is from west-south-west to east-north-east. Those valleys which follow a general east-north-east or west-south-west direction resemble the furrows in the surface of old sawn timber, for they have been worn along the softer belts of rock and are walled on either hand by parallel ridges due to the harder belts. Such valleys are described as "longitudinal." Those valleys, on the other hand, are "transverse" which are cut into the rocks at right angles to the graining, and thus notch in succession a series of the hard upstanding ridges. In general the section of a longitudinal valley has the shape of the letter U, for the valley bed is broad, whereas the section of a transverse valley at those points where it crosses the ridges of hard rock



THE RHINE BRIDGE AT THUSIS.



THE RHAETIC RHINE

has usually the shape of a V. Typical longitudinal valleys in the Rhaetic Alps are the Bündner Oberland from Dissentis to Chur, the Rheinwald, the Davos Valley, and the Engadine. Transverse valleys, on the other hand, are those of Avers and of the Oberhalbstein Rhine. Essentially transverse in character, although oblique in direction, are the Via Mala and Schyn Gorges of the Hinter Rhine and the Albula. It will be seen, of course, that the same valley may be longitudinal in one section and transverse in another. Thus the Rhine flows longitudinally through the Rheinwald, transversely through the Via Mala, and longitudinally again from Reichenau to Chur.

The division of valleys into longitudinal and transverse sections, although illuminating, is merely descriptive. There is another terminology, which has come into use of recent years largely owing to the initiative of Professor Davis of Harvard University, which attempts to define the valley origins. We have seen that, at a recent date, geologically speaking, the twin sources of the Rhine were at the heads of the Avers and Oberhalbstein valleys, and that transverse streams, at a much higher level than the present drainage, flowed northward with parallel courses

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from these sources, on the one hand over the Kunkels Pass, on the other hand over the Lenzer Heath, until at Ragatz, forty miles to north of the sources, they converged and joined. Since water cannot flow uphill, we must assume that these rivers were originally caused by the off-flow of the drainage from a primitive water-parting in the south of the Grisons, and that they ran over a smooth plateau tilted northward. That plateau, though smooth like the surface of freshly sawn timber, must have exhibited on its surface a series of rock belts like the cut grain of the timber. As time progressed, the two rivers eroded deep valleys into the plateau, making a series of gorges where the harder rock beds were intersected. Tributary streams would work longitudinal valleys into the softer rocks of the intervening beds, and these valleys would descend with wide bottoms from right and left to the main transverse valleys. According to the terminology of Professor Davis the original river would be described as "consequent," for it was consequent on the original tilt of the land surface, and the longitudinal tributaries would be described as "subsequent," for they have been subsequently eroded. It is in the next stage, however, of the evolution of the river system that the

THE RHAETIC RHINE

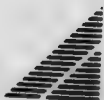
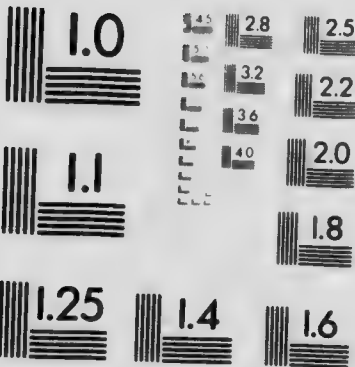
chief interest lies of this method of river description. Here and there a longitudinal tributary, working under especially favourable conditions, either because of the strength of its springs or because of the softness of the rocks of its valley, would push its sources back into the mountains until it effected a breach through them and captured the drainage of a neighbouring valley whose stream it is said to behead. Such beheadings we have seen are in progress in the Nolla Valley, and in all probability have taken place in the past at the head of the Davos Valley, at Tiefenkasten in the head of the Schyn Gorge, and at Tamins below the Kunkels Pass.

Employing this system of terms we should describe the Oberhalbstein Rhine as consequent from its source at Tiefenkasten, as subsequent in the Schyn Gorge, as consequent again from Thusis to Reichenau, as subsequent thence to Chur, and as consequent once more from Chur to Ragatz. It will be seen that the terms "transverse" and "consequent" are not always interchangeable, for the Schyn Gorge could be described as "obliquely transverse" but also as "subsequent." There can be no doubt that the use of the terms "consequent" and "subsequent" adds greatly to the interest of map studies, though care is



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THE RHINE

needed lest we ascribe origins to valleys without adequate investigation of their geological histories. In the present instance, however, the facts are reasonably certain.

Perhaps the most impressive evidence of the vast physical changes rapidly in progress in the Alps of the Grisons is to be found in the neighbourhood of Reichenau, just above where the Vorder and Hinter Rhines join. Here have been landslips from the northern wall of the valley, both in prehistoric and historic times, on so vast a scale that the debris formerly blocked the valley and converted its upper reaches into a lake. As a consequence, the high road from Ilanz to Reichenau has been carried not beside the Rhine, which has cut a deep gorge through the tumbled mass, but some miles northward past Flims, high over the vast mound of debris, through upper meadows and pine woods, and past small lakes ponded on the fallen material. The cause of these landslips is that the valley wall is formed below of a crumbling slate and above of a solid but fissured limestone. The water percolating down through the fissures washes away so much of the underlying softer formation that the torrents which put out on the mountain-side undermine

THE RHAETIC RHINE

the limestone, and this falls from time to time in mountainous masses.

The block of mountain behind Chur, engirt by the Prättigau, Davos, and the Schyn, is trenched by two significant alleys. Worn into its western shoulder is the depression of the Lenzer Heath, the dead valley of the ancient Oberhalbstein. Cut circuitously into its eastern shoulder is the valley known as Schanfigg, through which flows the Plessur. The health resort of Arosa is set high on the central mass enclosed by these two valleys. The roads leading to Arosa through Schanfigg do not follow the Plessur, for this stream, like the Oberhalbstein Rhine, has cut a deep trench for itself into the more level bed of a former loftier valley, with the result that there are two terraces high on either slope following the curves of the valley. On these terraces are ranged two strings of villages connected by the two roads to Arosa.

Chur, placed where the streams from the valleys of Schanfigg and Lenz join and flow to the Rhine, is the one town in the Grisons, and it has less than ten thousand inhabitants. In Roman times Curia, the Court, was as now the one urban community and administrative centre of the uppermost Rhineland. When the Roman administration broke down, in the disorder

THE RHINE

of the early Middle Ages, civilization was maintained in Rhaetia by the Bishop of Chur and by the abbots of Dissentis and Pfäfers. Rivals presently intruded, secular feudal lords, petty tyrants of the valleys, who built castles which now stand in frequent ruin throughout the land. The remote Engadine, however, remained the special appanage of the bishops of Chur.

Late in the Middle Ages the peasants rose against their oppressors, and with the assistance of the ecclesiastical authorities at Dissentis and Chur, and even of certain of the temporal lords, the revolution was comparatively easy, and there ensued a federal republic. Each parish or commune became independent for purposes of local business. The communes were grouped in some sixty *gerichte* or districts, which were sovereign states and sent delegates to represent them in the leagues of *gerichte*. There were three such leagues, the Graubund, the Zehngerichte, and the Ca De. The Graubund had its origin under the maple tree of Truns, and its later centre at Ilanz. It included the Bündner Oberland, the Valser and Safer valleys and the Rheinwald and Avers. The Zehngerichtenbund, the league of the ten districts, held the Prättigau, Schanfigg, and Davos. The cap-



THE HOHEN-RHÄTEN.

THE RHAETIC RHINE

ital of this was Davos. The Ca De or Gotteshausbund, the league of God's House, because Chur with its cathedral was the capital of it, included the Engadine and extended down the Albula and Oberhalbstein valleys to Chur. Finally, the three leagues were themselves in league, and presently in alliance, with the Swiss Confederation beyond the Tödi. But it was not until Europe was reconstructed at Vienna in 1814-15 that the Grisons emerged as a canton of the Swiss Confederation.

The controlling influence of the Rhaetic valleys of the Rhine is evident in every stage of this history. The great range of the Tödi, emphasized by the deep valley of the Bündner Oberland, has not merely separated the glacial sources of the Rhine into two series, Rhaetic and Swiss, but has also divided the inhabitants, until in the most recent epoch of history, into two communities, Rhaetic and Helvetic—the league of the Graubünden and the Swiss Confederation. On the other hand the high-lying valleys of the south had easy communication over the many passes into the heads of the Italian valleys, with the result that Romansch—of Southern and not Northern derivation—is the language of the Highlands. The conquests made by the high-

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landers have been by the same relatively easy paths, and therefore beyond their Italian and not their German frontier. Hohenrhätien, the legendary centre of the immigrant Etruscans, is above Thusis at the entry to the northern, more deeply trenched section of the Rhaetic valleys. Chur, on the other hand, has reference not so much to highland defence as to the through route from north to south, which penetrates the Tödi-Rhaetikon barrier by the one available gateway; hence the Roman, the Christian, and the Teutonic significance of this little town.

Only less important, however, than the remarkable gateway in the northern barrier are the internal difficulties of communication due to the Schyn and Via Mala gorges, and to the gorge, west of Reichenau, cut by the Rhine through the great landslip which closes the Bündner Oberland. In harmony with this physical geography is the fact that the German colonists for the medieval military frontier in the Rheinwald and in Avers were drawn, not from Chur but over the Furker and Oberalp Passes from the Upper Valais. At a later time the distribution of the three leagues of the Graubünden was naturally influenced by the same obstacles; for the Graubund may be described as shut in by the Via Mala and by the gorge above Reiche-

THE RHAETIC RHINE

nau, while the Zehngerichtenbund occupied the open valleys of the Prättigau and Davos connected by the wind gap at the head of the Landwasser, and the curiously distributed Ca De had an easy way of communication to Chur from the Engadine, by the Julier Pass, the Oberhalbstein Valley, and the Lenzer Heath. Thus a system of drainage, transverse and longitudinal, prepared by a long geological history, has done much in the recent centuries to shape the destinies of one of the most interesting communities in Europe.

Chapter Three

THE SWABIAN RHINE

FROM Ragatz the Rhine flows northward for thirty miles to the Lake of Constance. The valley is here bounded on either hand by steep wooded mountains with vineyards on their lower slopes, while the flood plain grows gradually broader, until as it approaches the lake it becomes a considerable delta, green with maize crops, five miles in width. It has a carpet of alluvium, and through this there rise here and there knolls of the underlying hard rock. Fed by the abundant snows and rains of the upper basin in the Graubünden, the river is liable to sudden rises and has been embanked with long care, so that it now flows with a course raised above the plain. The towns, therefore, such as Feldkirch and Dornbirn on the right hand, and Altstätten on the left stand back from the river at the foot of the slopes for fear of disaster. Even Bregenz and Rorschach, ports on the lake, are placed away from the mouth of

THE SWABIAN RHINE

the river on firm ground at the edges of the delta. It was from these ports that one of the great streams of medieval traffic passed up the Rhine valley and through Chur by the Rhaetic passes into Italy.

With mountains on either side rising to more than 4,000 feet above the river, the Rhine valley is in this part so decisive a feature as to be a complete break between the Swiss and the Austrian Alps. Yet it is probable that in times geologically very recent the Rhine did not flow this way at all. There is a breach in the left wall of the valley about four miles north of Ragatz which is cut down to within twenty feet of the river level. The little town of Sargans with a conspicuous castle is placed on the mound which prevents the Rhine from flowing through the opening into the Seez Valley, and so through the Lakes of Wallenstadt and Zurich. Gravels occur between Sargans and Wallenstadt made of pebbles which have been derived from the rocks of the Graubünden, and geological opinion infers that they were deposited by the Rhine when it flowed this way. It is said that even as late as the seventeenth century artificial dykes hurriedly erected at Sargans were needed in a time of high flood to prevent a catastrophe.

The castle of Sargans was bought by the Swiss in

THE RHINE

the early days of their independence, for the gap made by the former Rhine offered an open way from the Graubünden and from Tyrol into the heart of the Confederation. Certain farms and villages westward of Sargans and along the shores of the lake of Wallenstadt bear names Prümsch, Siguns, Terzen, Quarten, and Quinten, which are said to be derived from Prima, Secunda, Tertia, Quarta, and Quinta, Roman stations on the great road over the Julier Pass and through Chur away to Vindonissa, the Roman city beyond Zurich at the junction of the Limmat and the Reuss with the Aar. To-day the railway from Basle makes use of the gap not only for the purpose of access to Chur, but also for the expresses to Vienna which traverse the Arlberg tunnel to Innsbruck.

Between these deep and broad valleys of the present and of the former Rhine, which diverge at Sargans, there stands a detached block of the Alps of triangular form with a sharp southward angle. It has steep unbroken slopes fronting eastward to the Rhine and southward to the Lake of Wallenstadt, but northwestward there is a more gradual descent to the Thurgau. The line between the higher and the lower country in this direction may be roughly drawn from

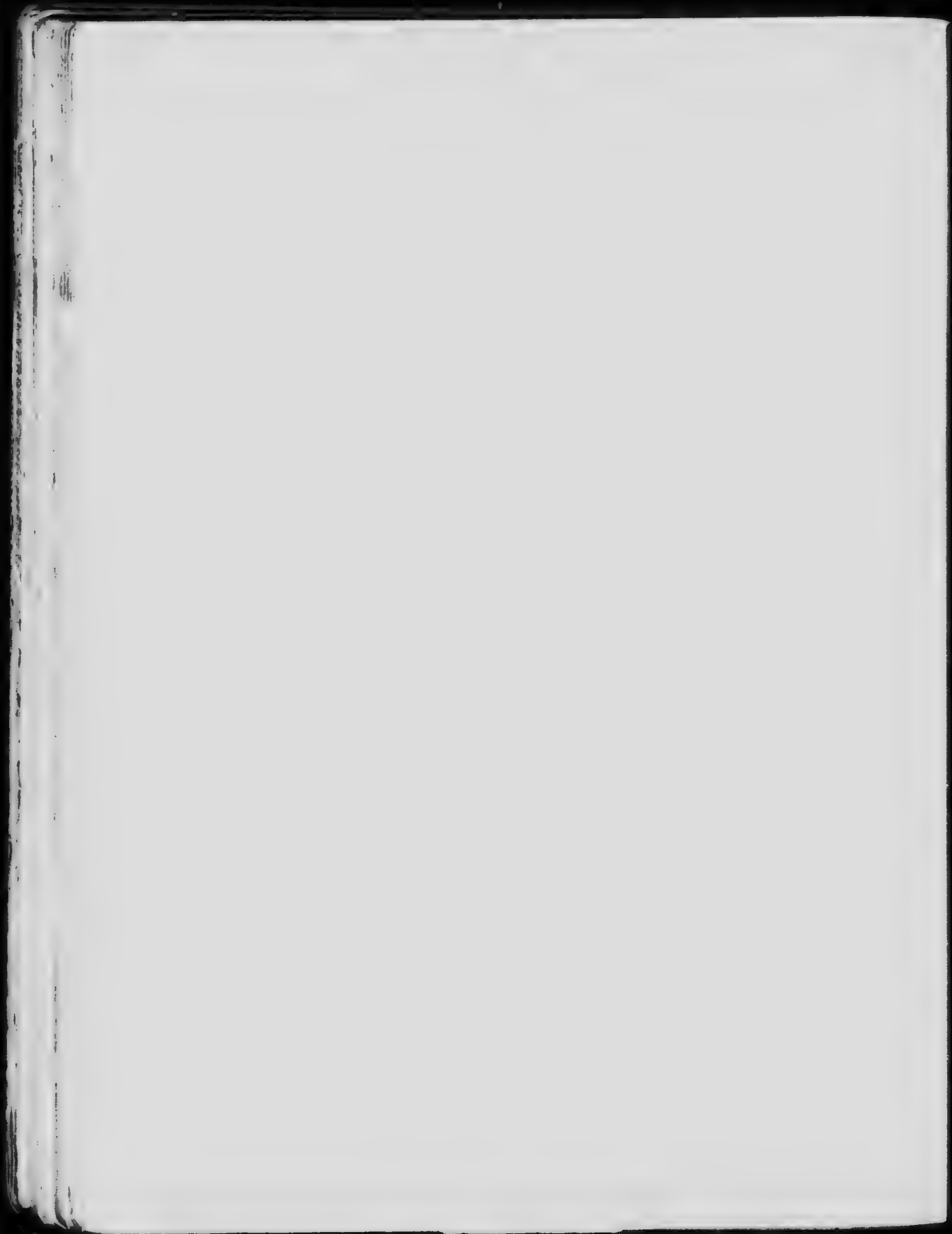


THE RIVER TAMINA



THE OLD CHURCH

RAGATZ



THE SWABIAN RHINE

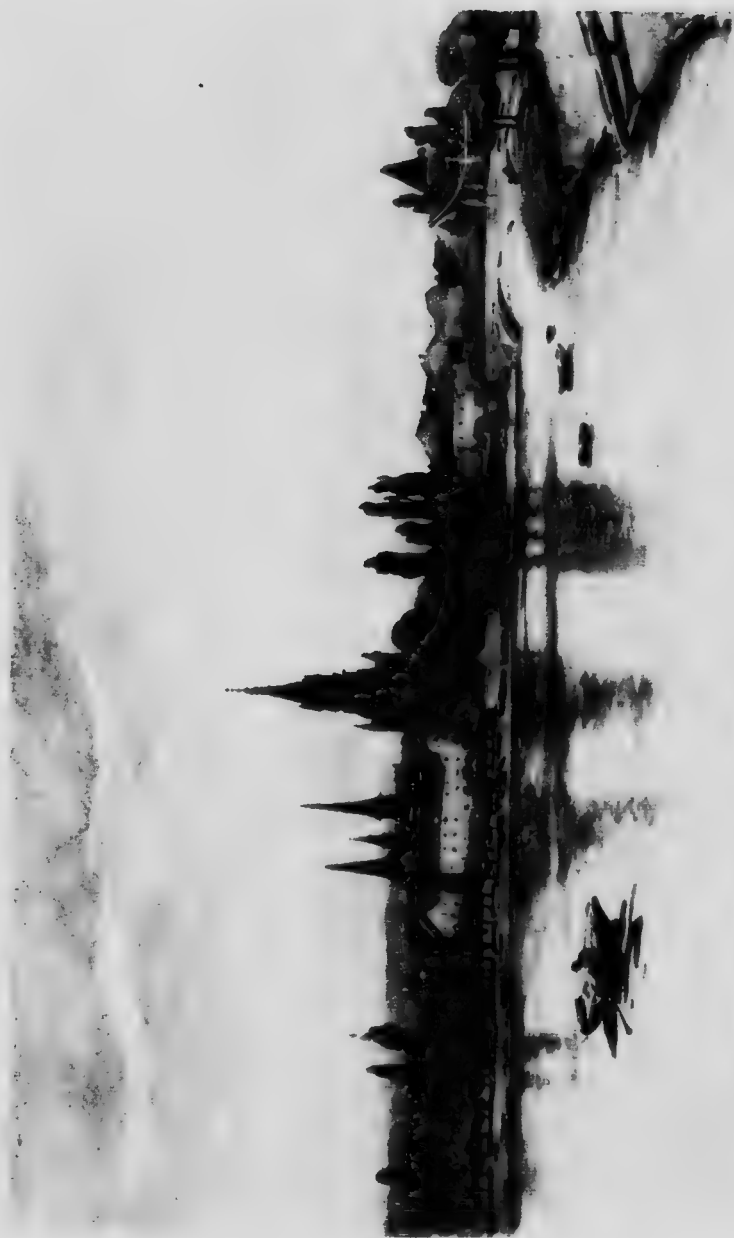
Romanshorn on the Lake of Constance to Rapperschwyl on the Lake of Zurich. Two streams, the Thur and its tributary the Sitter, descend to the Thurgau through this island of mountains from sources near their Rhineward brink, and the valley of each is bounded southward by a conspicuous mountain. The southern of the two is a seven-peaked ridge known as the Kurfürsten or electors, for there were seven electors in the medieval empire. Its southward face is a savage cliff almost devoid of vegetation, which rises 3,000 feet sheer from the water of the lake, and leaves no room for a road. The northward slope is more gradual and descends pasture-clad into the Tottenburg or Thur valley, whose opposite face is the steep southern front of the Säntis, a most beautiful peak of 7,000 feet, a little higher than the highest of the Kurfürsten. The northern face of the Säntis is furrowed by a series of little valleys containing tarns, and the torrents from these flowing north-eastward are collected by the Sitter, which runs north-westward through the famous valley of Appenzell.

The whole wedge of mountains spreading from the angle at Sargans is contained within the canton of St. Gallen, but within this again like a nut within a nutshell, is the little canton of Appenzell. The valley

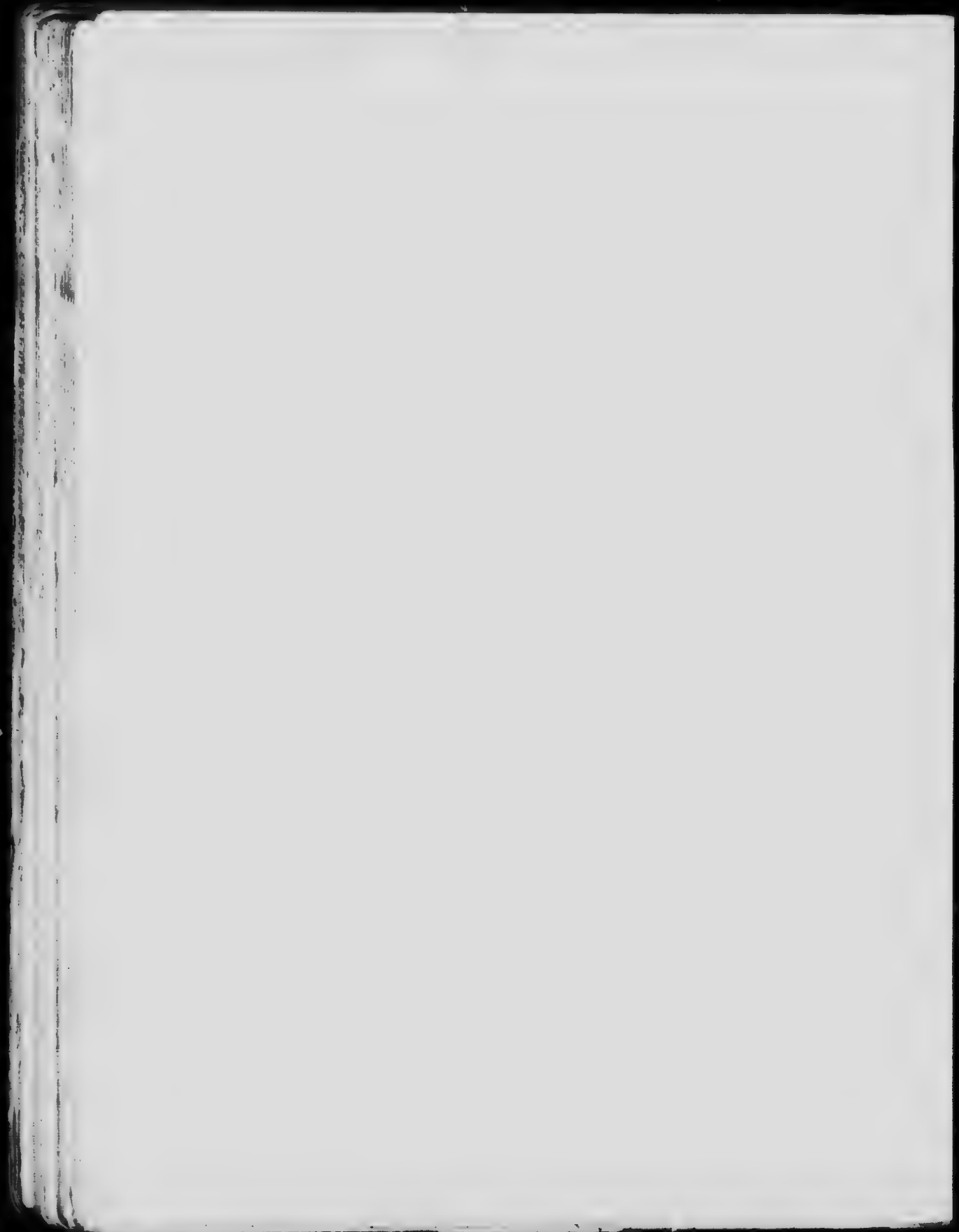
THE RHINE

of Toggenburg and all the outer slopes of the Appenzell massif belong to St. Gallen, but the Säntis peaks, the valley and tributary valleys of Appenzell, and a ridge of alpine pasture extending north-eastward till it drops precipitously to the Lake of Constance near the Rhine mouth, form the canton of Appenzell. This little canton is, therefore, wholly upland and has no point lower than a thousand feet above the neighbouring Rhine valley. It is true that the Alps of St. Gallen and Appenzell bear no eternal snows, but they present in unrivalled beauty all the other features of the outer limestone Alps—peaks and precipices, lakes and glens, pastures and forests. In the summer their high pastures are joyous with flowers and with the sound of the cow bells and the songs of the milkmaids. Moreover, this is one of the wealthiest districts in all the Alpine land. Each peasant's house is a hive of industry, and there are factories driven by water power in all the lower valleys. The characteristic fabric is the muslin of St. Gallen, exported as far as England.

The people of St. Gallen and Appenzell owe the energy and enterprise which have brought them wealth to a remarkable history. In their mountain fortress, placed high above the cornfields of the Thur-



KONSTANZ (CONSTANCE) FROM THE LAKE.



THE SWABIAN RHINE

gau and above the traffic ways, convergent at Sargans, of the Rhine and Zurich valleys, they have rivalled the Swiss of the Forest Cantons in their sturdy battles for liberty, as well internal as external. In each great epoch of European history they have played a characteristic part. Away back in the seventh century, in the beginning of the Darkest Ages, when Britain had been overrun by pagan Saxons, and Christianity and learning had found a refuge in the Sister Isle, an Irish monk, St. Gallen, set out with comrades for Rome. Following the usual track, he traversed the Lake of Constance by boat, for land roads were then in bad repair, and men travelled by boat whenever possible. Here he was taken ill and was landed, apparently near the modern tower of Rorschach, while his companions continued their journey by Chur over the Rhaetic Passes. History, or perhaps we should say legend, does not record what vision or other divine message led St. Gallen on his recovery to vow the remainder of his life to the conversion of the tribes in the neighbouring mountains. He established his monkish cell 1,000 feet above the lake near the source of the Steinach torrent, where to-day stands an industrial city of 30,000 people which bears his name. The tomb of the father

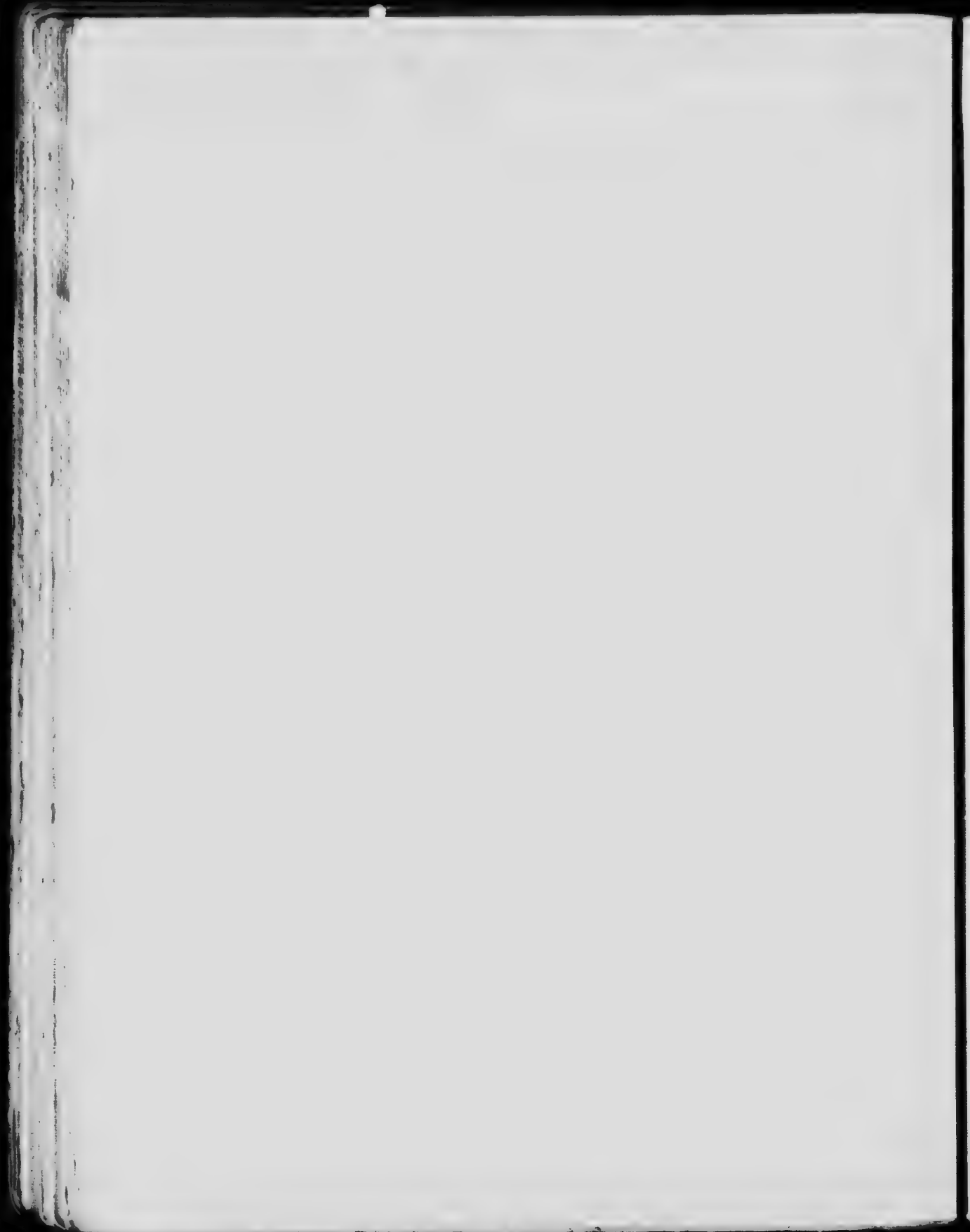
THE RHINE

of the local church became the local and presently more than a local place of pilgrimage. An abbey was built, and when in the tenth century the Moors from the south and Magyars from the east harried the lowlands and penetrated even into the Alpine valleys, it became necessary to erect walls for the protection of the abbey and of the little town of dependents which had grown up around it. The security of these walls attracted yet other dwellers, and St. Gallen became a place of industry as well as a shrine. True to their Irish foundation the monks of St. Gallen were distinguished in all Europe for their devotion to learning. Centuries before the Renaissance they studied Greek as well as Latin, and preserved and copied ancient texts. The library of St. Gallen is to-day still a treasure-house of priceless manuscripts.

In the fourteenth and fifteenth centuries, when the people of the Forest Cantons round the Lake of Lucerne, and presently the people also of the Graubünden, expelled their local tyrants, the movement for freedom spread into the mountains of St. Gallen. In the valley of the Sitter at the foot of the Säntis the Abbot had a country house, the Appenzell or Abbot's cell, and it was here that the little revolution centred.



THE COUNCIL HALL, KONSTANZ



THE SWABIAN RHINE

Stern fights were fought, worthy to rank with Morgarten and Sempach, and the Abbot brought to his aid the Duke of Austria, the Hapsburg, the overlord from whom the Swiss had revolted. There is a path which leads from Altstatten in the Rhine Valley up the steep eastern face of the hills of St. Gallen and by the Stoss Pass on to the upland pastures. Here the Abbot and the Duke were conclusively defeated, and the Appenzellers obtained their liberty, and were first allied with, and then in the sixteenth century federated with, the Swiss of Lucerne. But the jurisdiction of the Abbot continued on the lower slopes, so that the little peasant republic was completely surrounded by his territory. Within fifty years, however, of the battle of the Stoss Pass, the Abbot of St. Gallen was himself making the best of the new free world by entering the Swiss Alliance, an example of ecclesiastical wisdom paralleled in the Graubünden, as we have already seen, by the Bishop of Chur and the Abbot of Dissentis.

When the Reformation came, the men of Appenzell fell out among themselves. Zwingli, the Reformer of Zurich, was born within the adjoining territory of the Abbot, at Wildhaus on the crest of the Pass leading from the Toggenburg over the south-

THE RHINE

eastern shoulder of the Sântis down into the Rhine valley. The upshot of the struggle was that the Appenzellers agreed to differ. Those who dwelt at the immediate foot of the Sântis and fed their cattle on the upper pastures round the village of Appenzell remained faithful to the old religion, and formed a new republic, the Inner Rhoden of Appenzell. Those, on the other hand, to the west, the north, and the north-east, whose pastures were a little lower and nearer to the life of Zurich, accepted the reformed faith, and made the Ausser Rhoden, a curious decentralized state with no capital village. For the purposes of federal government the two Rhoden agreed to share the cantonal rights, each sending one representative only to the meeting of the Swiss federal delegates. For internal purposes, however, the principle of delegation is to this day eschewed in Appenzell, and the citizens have not only the right to vote in their parliament but the duty of doing so under the penalty of a fine. The two assemblies meet once a year in April, and that of the Ausser Rhoden is attended by as many as ten thousand men. St. Gallen and the valley of the Toggenburg having fought with their Abbot as late as the eighteenth century, got rid of him finally in the French Revolution, and

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at the Peace after the Napoleonic Wars St. Gallen emerged as one of the twenty-one cantons.

The industries of St. Gallen city, the Toggenburg, and the Ausser Rhoden have changed, although without spoiling the aspect of the hills and valleys, and the Auser Rhoden is now one of the most densely peopled districts in the Alps, while St. Gallen is the only considerable town of Switzerland which is placed not by the shore of river or lake but high on the mountain shoulder. Inner Rhoden, still Roman Catholic, has undergone less change and acquired less wealth, and it is not until the stranger enters the Office of the Archives of Appenzell village, and sees there the banners taken in many an ancient fight, that he realizes that the Appenzellers of the Inner and of the Ausser Rhoden are one in spirit, though they have differed in opinion. There are the flags of neighbouring cities—Constance, Winterthur, Feldkirch, Landeck—and the flags taken in later mercenary service, even from distant Genoa and Venice.

From Sargans to the Lake of Constance the Rhine, wandering over the bed of its broad, trough-like valley, forms the boundary of Switzerland. On the east side of the river are two little States, the principality of Lichtenstein and the county of Vorarlberg, the lat-

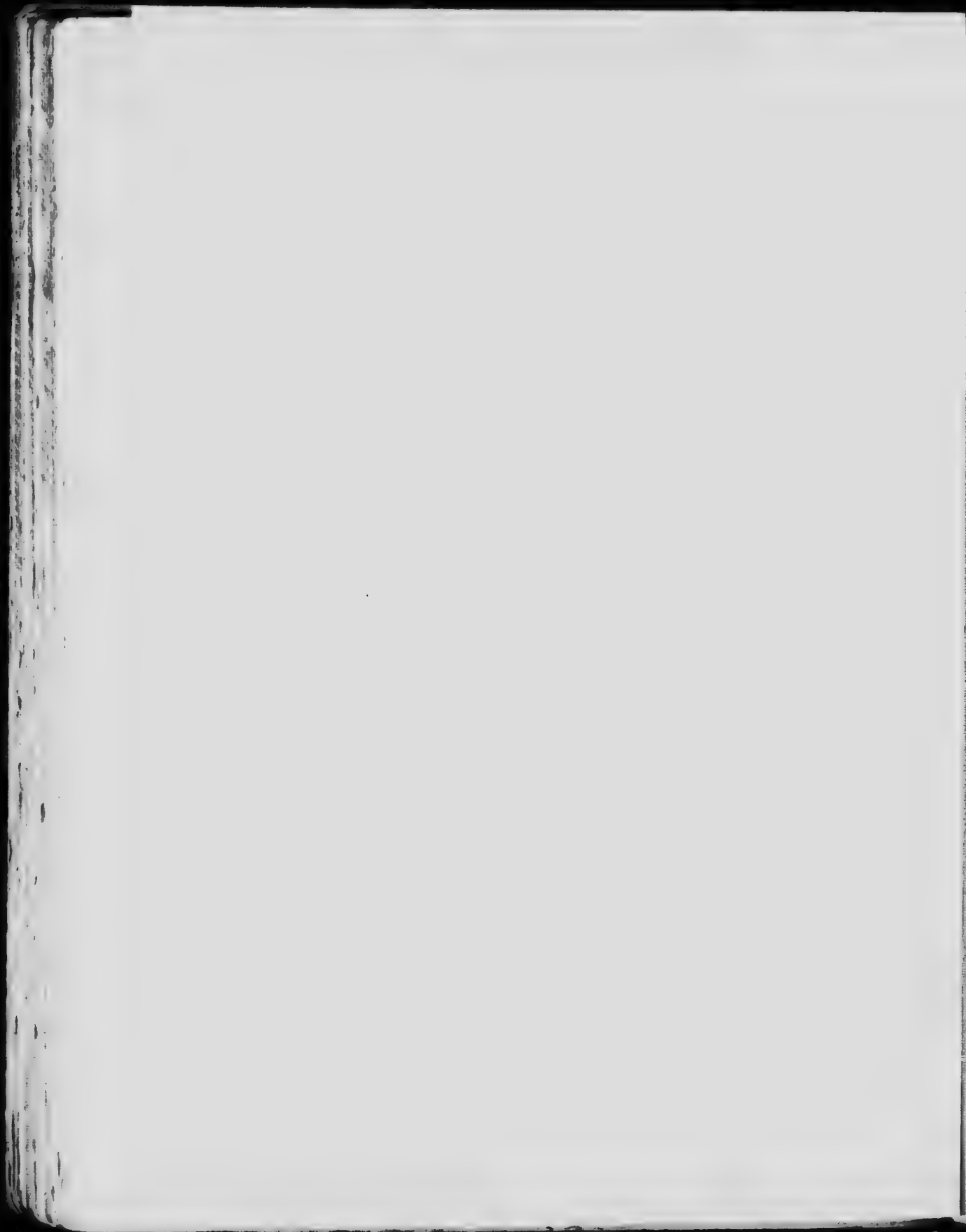
THE RHINE

'ter one of the " Crown Lands " of Austria. Lichtenstein, on the other hand, though its Prince is an Austrian, was forgotten by the diplomats who resettled the map of Central Europe after the war of 1866, and ranks therefore as one of the component sovereignties of Europe. It measures only ten miles in length, but prior to 1866 had to contribute a company of soldiers to the German federal forces.

The Vorarlberg is a district rather larger than the Cantons of St. Gallen and Appenzell. It is separated southward from the Graubünden by the Rhaetikon ridge and eastward from Tyrol by the water-parting between the Rhine and the Danube, over which the Arlberg Pass bends from Innsbruck and Landeck. The Vorarlberg is so named because it lies away from Tyrol, beyond the Arlberg, on the Rhineward slope. It is peopled by Germans of the same Swabian stock as the Swiss, but the Tyrolese behind the Arlberg are of the Bavarian stock. The Vorarlberg resembles Switzerland also in the prevalence of pasture land and in the small extent of the forest as compared with the rest of the Austrian Alps. It has many of the same industries as St. Gallen, and its peasants are therefore relatively wealthy and educated. Indeed, until the Arlberg



THE RHEINTURM, KONSTANZ (CONSTANCE).



THE SWABIAN RHINE

tunnel was pierced for more than six miles through the barrier of mountain which divides it from Tyrol, the Vorarlberg was in more intimate relation with Switzerland than with Vienna in every respect but political allegiance. Yet unlike the neighbour-land across the Rhine, the Vorarlberg is not one of the consecrated shrines of the history of liberty. The broad valleys of the Ill and the Bregenzer Ach descend openly to the great Rhine road along the western frontier, and give too easy access to its Alpine recesses. There is a striking contrast between the gradual western descent of the Bregenzerwald and the proud mountain wall of Appenzell, unbreached by valleys, on the other side of the Rhine.

The Lake of Constance, or as the Germans call it, the Bodensee, is a sheet of water some forty miles in length by ten in breadth. It measures more than 200 square miles in area, or nearly twice as much as the County of London. The surface of its water is 1,300 feet above the sea, and it has a depth at deepest of nearly 900 feet, so that the basin in which it lies is depressed to within 400 feet of the sea level. In cold winters the ice forms round the shores, and once or twice in a century it is completely frozen over. Relatively, however, to the high plains of Swabia on

THE RHINE

either side of it, the shores of the Lake of Constance have a most delightful climate, for the extremes of temperature are moderated by the neighbourhood of so large a body of water, and the average temperature of the year is comparatively high, since the ground rises steadily from either shore to plains more than a thousand feet above the lake level. The Bodensee is, therefore, a sunlit space, engirt by a continuous ring of vineyards and orchards. Its significance is not, however, due solely to these pleasant conditions, but also to its exceptional position. It stretches almost completely across the plain which intervenes between the edge of the Alps and the belt of limestone upland known as the Jura, which, after forming the boundary between Switzerland and France, is prolonged north-eastward across Southern Germany. Thus the Bodensee cuts into two sections the land of Swabia, which is Swiss on the left bank and German on the right, and all communications must be conducted across its surface by water, since the circuit of it either by the north or the south is impeded by the Alps on the one hand and the Jura on the other. As a result, none of the Alpine lakes bears a greater traffic or has had a greater commercial significance in the past.



BREGENZ. BODEN SEE LAKE OF KONSTANZ.

THE SWABIAN RHINE

The importance of the Lake of Constance is made evident on the map by its international character. Each surrounding territory has grasped some length, however short, of its shores. The ports are the Austrian Bregenz, the Bavarian Lindau, the Würtemberger Friederichshafen, the Badener Constance, Romanshorn of the Swiss Thurgau, and Rorschach of the Swiss St. Gallen. A busy traffic of steamers connects the Austrian, Bavarian, and Würtemberger rail heads with the Swiss railway at Romanshorn and Rorschach. Romanshorn is to-day the chief port of entry for corn, since the Swiss consume far more corn than they grow, and import additional supplies from the more thinly populated countries of south-eastern Germany. In earlier times, however, when one of the chief routes from Northern Europe into Italy lay from the navigable portion of the Rhine southward over the Rhaetic Passes, the chief traffic was not across but along the lake, which is hence named for the ports Constance and Bodmann near its northern extremity. For the Romans it was the Lacus Brigantinus from Bregenz, the port at the southern extremity, which was at the end of the road over the Alps.

The northern end of the Boden See is narrowed to

THE RHINE

a long gulf, the Uberlinger See or Lake of Uberlingen, which has steeper edges, and therefore less favoured shores than along the broader part of the lake. Parallel with the Uberlinger See there is another lake known as the Unter See or Lower Lake, to which the Rhine escapes by a channel under the Bridge of Constance, and descends a foot or two from the Bodensee or Upper Lake. Between the Uberlinger See and the Unter See there is a long peninsula carrying southward the Baden Railway to Constance, which, although on the left bank, belongs to the Grand Duchy. This German enclave on the Swiss side is a typical monument upon the map of the course of Swabian history. The little towns connected with the traffic on the Bodensee—Schaffhausen, Constance, Lindau, and the others—were in the Middle Ages so many little republics owing suzerainty directly to the Emperor and practically independent. Around them were only small seigneuries and lordships whose power was not sufficient to threaten their freedom. Towards the end of the Middle Ages, when the Hapsburg power was consolidating, Constance was in frequent league with the Swiss, and especially with the cities of Zurich and Berne. But as in the history of so many other of the



THE TOWER OF LINDAU ON THE BODEN SEE (LAKE OF KONSTANZ).

THE SWABIAN RHINE

free cities of the Empire, there was a secular contest at Constance between the bishops and the burghers, for the position of the city as a bridge-place over an important line of water traffic had early made it a centre of ecclesiastical organization. In the counter reformation of the sixteenth century, Constance was forcibly recovered from the Protestants by the Austrians and Spaniards, and, losing its status of free city, parted politically from the Swiss alliance. It was natural that a great effort should be made to retain for the Church the seat of the Great Council of the fifteenth century.

To understand the physical meaning of the Lake of Constance, it is necessary to bear in mind the fact that in the Ice Age a vast glacier emerged from the Rhine valley of the Grisons, and spread in a fan over all the Swabian Plain as far as the Jura. In pre-glacial times it is likely that the Boden See was tributary to the Danube, although it must then have been at a much higher level, for Ulm on the Danube, away to the north-east, is nearly 300 feet higher than the present lake surface. Two small rivers, the Argen and the Schüssen, now descend from Württemberg and Bavaria to the Boden See, with valleys trenced deeply into the Swabian high plain. The

THE RHINE

water parting between these tributaries of the Rhine and the streams which flow towards Ulm and the Danube is formed only by the great moraines which were left by the Rhine glacier when it spread furthest. North-westward of the Boden See, beyond the end of the Uberlinger See and the Unter See, are other morainic traces, but here the landscape is varied not only by the past action of ice, but also by extinct volcanoes. There is a relatively depressed area in this direction known as the Hegau, sunk among hills of jurassic limestone, and from this there rise to heights of more than 2,000 feet, or nearly a thousand feet above the surrounding plain, isolated conical hills crowned with castles. One of these, the Hohentviel, belongs to Würtemberg, though encompassed by the territory of Baden—another relic upon the map of the times when Swabia was a chaos of little states. Hohentviel commands a magnificent view of the Alps, extending, it is said, even as far as the Mont Blanc.

In post-glacial times the Rhine has escaped now by one and now by another of the northward extensions of the Boden See. At one time it issued, apparently, from the Uberlinger See by the valley now occupied in the opposite direction by the little



THE FALLS OF THE RHINE, SCHAFFHAUSEN



THE SWABIAN RHINE

Stockach, and then completely traversed the Jura range into the valley known as the Klettgau, down which there now flows in a south-westerly direction the Wutach tributary of the Rhine. At a later time it would seem that the exit was from the end of the Unter See, through a depression now occupied by the Ach and further on by the Bibber. Now, however, the Rhine emerges from the side and not from the end of the Unter See, and forms a broad, navigable channel, in effect a long arm of the lake, as far as Schaffhausen, thirty miles from Constance and sixty from Bregenz. The syllable "Schaff" has reference to the medieval skiffs or ships of the lake navigation. Yet another abandoned channel may be observed leading westward from Schaffhausen through the Jura Range to the Klettgau, but the present river turns southward, although it is evident that its channel is comparatively new, and as the American geographers would say, not yet graded, for at Neuhausen, just south of Schaffhausen, the stream is precipitated over a limestone spur of the Jura, and forms the celebrated Falls, seventy feet in height. The water, cleared of sediment in the still Boden See, does not appear to be destroying very rapidly the ledge of rock beneath, for there is a pyramid of stone

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in the centre, dividing the fall into right and left cascades, the destruction of which, by the action of the water, has made little or no progress since records have been preserved. The town and neighbourhood of Schaffhausen, though on the right bank of the Rhine, belong to Switzerland, in compensation as it were for Constance. But Switzerland has the better of the situation, for the falls are now a source of electrical power, and the mother, therefore, of industries.

In the Unter See, facing the exit of the Rhine, there is an island named Reichenau, upon which, for a thousand years until dissolved in the French Revolution, there stood a famous abbey, the remains of which still attract the eye of the voyager, and remind him of the time when the Rhine valley was the chief pathway not only of the merchants, but also of the missionaries. Reichenau, Constance, St. Gallen, Pfäfers, Chur, and Dissentis; these were the stages in a very "alley of priests," along which in the wild times of the early Middle Ages were sown the seeds of civilization. A few miles south of the Schaffhausen Falls is the island Rheinau, the seat of another great abbey founded in the eighth century at the same time as Reichenau, and notable as the



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home of Findan, one of those Irish monks who played so curiously important a part in the conversion of the Germans of the Rhine valley. At Säckingen, yet a little further down the river in the direction of Basle, there was still another great monastery of Irish foundation, the rival of St. Gallen and Dissentis, also Irish by origin.

One small territory there is on the right bank, that of Eglisau, which is Swiss, and another no larger opposite to Basle, but for the rest the Rhine is the boundary between Switzerland and Germany from Schaffhausen to Basle. In this part of its course it receives three considerable tributaries. The first is the Thur from the Alps of Appenzell and St. Gallen, a disorderly river, liable to floods, because its flow is not regulated as is that of the Rhine by passage through a lake. The suggestion has been made that the Thur should be diverted through the Lake of Constance. Then at Coblenz—the Swiss Coblenz, whose name like that of the greater Coblenz signifies merely “the confluence”—there is a rich gathering of waters, for the Wutach enters through the Klettgau from the north bringing a torrent of Black Forest water, and the great river Aar comes in from the south bearing the drainage of two-thirds of Swit-

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zerland. The Rhine has here come completely through the Jura Range which it entered near Egli-sau, and from Conz, being now swollen by the entire burden of its Alpine waters, it flows through a new section of its valley, remarkable because the river here divides countries which are not only politically separate but physically contrasted. To the south are the level limestone ridges of the Swiss Jura, to the north the rounded granitic and gneissic peaks of the Black Forest. The river itself flows just north of the intersection of the two formations, so that its waters tumble in frequent rapids over the crystalline rocks. At Laufenburg, where there are twin small towns, Swiss and German, connected by a covered wooden bridge, these rapids form an imposing rush of water, notable as a salmon fishery. A few miles lower down at Rheinfelden there is another rapid sufficient to prevent navigation, and then at last with a great bend from west to north the transparent green water swirls under the bridges of Basle and enters Germany.

Chapter Four

THE AAR

THE Rhaetic Rhine, although drawn from the remoter sources, is not the headstream which gives continental importance to the lower river. That position is due to the Aar, which enters at the Swiss Coblenz, nominally as a tributary. On the average of the seasons the Aar brings down more water than falls in the main stream over the cataract of Schaffhausen.

From Martigny on the Rhone to Chur on the Rhine the Alps are trenched longitudinally by a valley which is the most impressive feature of the map of Switzerland. It is drained as to one half north-eastward by the Rhine to the North Sea, and as to the other half south-westward by the Rhone to the Mediterranean. The Tyrolese Inn beyond the one end, and the Savoyard Arve beyond the other continue direct alignment, making clear that its origin is in the very structure of the range. There is evident symmetry, too, in the parallel northward

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gorges by which the Rhine and the Rhone emerge at Chur and at Martigny.

Between Martigny and Chur the mountains which form the northern wall of this long valley are a continuous range 120 miles long, precipitous southward, but with a more gradual descent northward, and from end to end they are drained down their northern slopes by the source streams of the river Aar. At either extremity towards Chur and towards Martigny the peaks are of 10,000 feet; in the centre they rise in the Finsteraarhorn to more than 14,000 feet. There is no pass over the summit ridge throughout the whole distance of less than 7,000 feet, except that at one point, to east of the Finsteraarhorn, the Reuss is drawn from south of the range through a remarkable gorge cleft right through the mountains to a depth only 4,000 feet above the sea. Before entering the gorge the Reuss flows from its head for ten miles in the great longitudinal valley itself, its basin being insinuated between the sources of the Vorder Rhine and the Rhonc. The road from Martigny up the Valais to the foot of the Rhone Glacier ascends to the Furka Pass of 8,000 feet, and comes down into the Urseren valley of the Reuss without changing its direction. From Andermatt, where at a height of

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4,700 feet the Reuss turns northward to the mouth of its gorge and so to the Aar, the road continues by the Oberalp Pass of 6,700 feet to Dissentis and Chur in the valley of the Vorder Rhine. Down to the thirteenth century no path had been made from the north through the Reuss gorge into Urseren, and the central compartment of the great Swiss valley communicated with the outer world chiefly by way of the Oberalp Pass and Rhaetia. The people of Urseren were then speakers of the Romonsch tongue, and for long owed allegiance to the Abbot of Dissentis.

The Reuss turns from the valley of Urseren into a gorge nearly four miles long in which the water falls more than a thousand feet. The opposing precipices are of smooth granite, and the high road leaves Urseren by a tunnel 200 feet long, the Urner Loch, pierced early in the eighteenth century to replace a wooden gallery suspended by chains over the rushing torrent. Immediately beyond this tunnel is a granite bridge over the Reuss of a single lofty arch, a hundred feet in span. Below are the remains of the older Devil's Bridge which after serving the mule path from the twelfth century was swept away by a flood only twenty years ago. Prior to the con-

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struction of the Devil's Bridge the Schöllenen gorge was impassable by man.

Below the gorge begins the historic valley of Uri, for Urseren, although now added to Uri, long retained a local self-rule, even through the suzerainty of it was transferred from the Abbey of Dissentis to the Canton of Uri. At Fluelen the Reuss enters the uppermost gulf of the complicated Lake of Lucerne. This gulf, known as the Urner See or Lake of Uri, has great cliffs on either hand, the rocks of which are bent and crumpled in precisely similar pattern on the opposing faces, so that it is evident that the lake here rests in a gorge cut through a continuous mountain mass. The cliffs are such that it was not until the year 1864, when the resources of modern engineering were available, that a road, the Axenstrasse, was carried to the valley of Uri by a cornice blasted in the face of the eastern cliff.

The Lake of Lucerne, or of the four Forest Cantons, was the centre and cause of the original Switzerland. The inhabitants of the valleys opening to its shores communicated with one another and with the outer world by boat upon its waters. Of these valleys that of Uri was perhaps the most inaccessible by land and the most dependent therefore upon the

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waterway. But the Muotta valley of Schwyz and the two valleys of Unterwalden were occupied by communities almost as secluded. The town of Lucerne, where the Reuss emerges from the lake and from the Alps, is the natural market for all the valleys of the Forest Cantons, and it was not wonderful therefore that when the Lordship of Lucerne passed to the House of Hapsburg the equanimity of the mountaineers should be disturbed, and that they should league themselves for the defence of their independence.

The ancestral castle of the Hapsburg family crowns the summit of a hill some thirty miles north of Lucerne, where the Aar and its tributaries the Reuss and the Limmat gather to a confluence at the foot of the Jura, a little south of the Rhine confluence at Coblenz. The position of Hapsburg is a remarkable one, and it commands a noteworthy landscape. Close at hand, the long, level lines of the steep south-eastward front of the Jura stretch away to the horizon, towards Geneva in the one direction and towards Schaffhausen in the other. Below the Jura on either hand is the undulating plain of Switzerland, and south-eastward beyond the sub-Alpine hills are ranged the snowy peaks of the Alps. Nearly the

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whole basin of the Aar is within view. At the foot of the Hapsburg hill, beside the convergent rivers, is the site of the Roman city of Vindonissa, the provincial centre of this part of the empire, and just round the hill corner, on the banks of the Limmat, lies the Swiss Baden where during several centuries the Federal Parliament of Switzerland met. From Basle on the Rhine a way leads by Säckingen and over the Jura, here declining to its end, to a crossing of the Aar below Hapsburg, and thence ways radiate through the lower country northward to Coblenz, eastward up the Limmat to Zurich, south-eastward up the Reuss to Zug, southward through the See Thal or Valley of Lakes to Lucerne, and south-westward along the banks of the Aar itself to Neuchâtel, Freiburg, and Berne. Truly Hapsburg was the fit cradle of an imperial race.

The three rivers which converge towards Hapsburg, the Limmat, the Reuss, and the Aar itself, have each a special part in the Swiss natural economy, and the valley of each has its own exit to the southern world beyond the Alpine barrier. Down the Limmat from Zurich, and from the Lakes of Zurich and Wallenstadt, comes a way through the gap of Sargans from the Grisons and the Rhaetic passes and so

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from the Lake of Como. Down the Reuss, or by the shorter path of the See Thal which avoids the circuit made by the Reuss itself, comes the way from Lucerne, and by the Lake of Lucerne from the gorge of the Devil's Bridge, Urseren, the St. Gothard Pass, and the Lago Maggiore. Finally down the Aar is the way from Berne and by the Lake of Geneva from the St. Bernard Pass. The cities of Zurich, Lucerne, and Berne have each played their appropriate part in Swiss history; Zurich often as the ally of the neighbouring Hapsburg; Lucerne as the centre of the "Ur Cantonen" or four original cantons; and Berne as the proud capital of the great canton whose single territory, larger than that of all the Ur Cantonen together, stretches from the summits of the range overlooking the Valais, across each main feature of Swiss geography, to the northern foot of the Jura. Basle at the head of the medieval navigation of the Rhine is in some sense the epitome of all three.

The Bernese Oberland extends for some sixty miles from the peaks of the Diablalets to the Grimsel Pass and the Rhone Glacier. In its western half it is limited towards the Valais by a single line of summits—Diablalets, Wildhorn, Wildstrubel, and Balm-

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horn, which rise from 10,000 to 12,000 feet, and have passes between them—Sarnetsch, Rawyl, and Gemmi, which are between 7,000 and 8,000 feet. In the eastern half, however, the ridge is double, for the ascending valley of the Rhone swerves eastward, and space is left for the largest snow-field of the Alps, culminating in the Finsteraarhorn. It measures twenty-five miles long by ten miles broad. East of this ice, beginning at the deep notch of the Grimsel Pass, only just more than 7,000 feet in elevation, is the Hasli valley containing the headstream of the Aar itself. Beyond Hasli the icefield is renewed in the Titlis area, from which the Rhone glacier is sent southward. Thus the Hasli Valley and the Grimsel Pass, lowest of all the cols over the front range of the Alps, have a physical interest and importance second only to the gorge of the Reuss, which is cut through the range immediately east of the Titlis. Beyond the Reuss is the broad Tödi ice, and then the snows of the range end in a series of peaks—Hausstock, Norab, Scheibe, and Graue Hörner, comparable to the single range of pass-separated peaks in the west of the Bernese Oberland, although a little lower. It will thus be seen that the ice of the great front range of the Alps is

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chiefly collected into three fields, which are divided by the deep depressions of the Aar valley and the Grimsel on the one hand, and of the Reuss gorge leading to Urseren on the other. These three fields give rise respectively to the Limmat, the Reuss, and the Aar.

The Aar river originates in the Oberaar and Unteraar glaciers, which descend eastward from the foot of the Finsteraarhorn into the Hasli valley. The streams issuing from these glaciers unite and turn northward from the foot of the Grimsel, immediately below the Hospice, and the broad torrent then plunges into a gorge cut into the glaciated bed of the rocky valley by the falls of Handeck, perhaps the finest in Switzerland, 130 feet high. Flowing onward it traverses a zone of pine forest, and then emerges in a green pastoral basin which is closed by a limestone ridge, 500 feet in height, through which a deep gorge has been cut to the lower valley at Meiringen. This valley of Hasli epitomizes the recent physical history of the Alps and of the Rhine sources. On the limestone ridge above Meiringen are blocks of granite, ice-carried, which speak of the former great extension of the glaciers. The gorge

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cut through this ridge tells of the lake which afterwards occupied the valley basin above; and away at the present sources of the river great moraines across the valley, a mile below the end of the Unteraar glacier, speak of the recently renewed shrinkage of the ice.

Below Meiringen the Aar turns westward, and expands into the Lake of Brienz, which was once continuous with the Lake of Thun until the Lutschine torrent, bringing down the drainage from the northern glaciers of the Bernese icefield, laid a delta completely across the deep basin and divided it into the two lakes. On this delta stands Interlaken, the rival of Lucerne as the tourist metropolis of Switzerland. The celebrated view from Interlaken up the Lutschine and Lauterbrunnen valley ends in the Jungfrau peak, while the Grindelwald valley enters the Lutschine valley from the east, bringing to it waters from the Ober Grindelwald and Unter Grindelwald glaciers. Another group of valleys, the Kanderthal and the Simmenthal, gather together at the foot of the pyramidal Niesen and enter the side of the lake of Thun. Thus the Aar when it issues from the Alps past the city of Thun is drawn from all the peaks and passes between the Wildhorn and

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the Grimsel. It is, therefore, the most important single headstream of the entire system of the Rhine.

Below Thun the Aar traverses the sub-Alpine hills and emerges on the plain at Berne. Although clear of the mountains it still flows at an elevation more than 1,500 feet above the sea, and cuts a gorge into the undulating landscape. The gorge makes a bend to the east and then back to the west, leaving a rocky promontory on which was founded by one of the Zähringen family the town of Berne. It is approachable by land only from the west, and in the other directions by bridges leading to steep ascents, which have been replaced southward and northward by high-level bridges, so that the suburbs beyond the river are now accessible on the flat. The landscape is ended distantly on the one hand by the glittering range of the peaks of the Oberland, on the other by the dark forested edge of the Jura.

From Berne the Aar flows westward for a time until it receives the Saane, a tributary descending from the Oberland, where it gathers water from all the northward glens west of the Simmenthal. Freiburg, of Zähringen foundation like Berne, lies a short distance up the Saane where it emerges from the mountains, some twenty miles from Berne, by the

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Lausanne road. Freiburg is Roman Catholic, and half its inhabitants speak French, for the Romance kingdom of Burgundy in the Middle Ages here lapped over from the shores of the Lake of Geneva into the basin of the Rhine. The language boundary strikes from the Jura south-south-eastward through Freiburg and the Oberland into the Valais, so that the people of the Upper Valais speak German, although originally approached from the German side only over the Grimsel Pass, for Urseren, it will be remembered, was formerly Romonsch.

Within ten miles of Freiburg are two little towns once of great significance, Payerne and Avenches, set in the plain towards the Lake of Neuchâtel. Avenches was the Roman Aventicum, on the road leading from the Lake of Geneva to Vindonissa and the Lake of Constance. Payerne belongs to a somewhat later time: it was the capital of Trans-Jurane Burgundy, one of the divisions into which broke the Burgundian kingdom of the Rhone basin.

Immediately beyond Avenches and Payerne lies a group of three considerable lakes, Neuchâtel, Bienne, and Morat, of which Neuchâtel is the largest lake whose shores are wholly Swiss. These waters, as a glance at the map will show, have a character

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wholly different from that of the other Alpine lakes of the Rhenish basin. Their long axes lie parallel to the Jura and to the Alps, not transverse to them. They have low shores, except where along the north-western edge of the lakes of Neuchâtel and Bienne there rises the front of the Jura. The streams which feed them are not important, for the main drainage of the Jura is carried westward to the Rhone basin, and the Saane picks up the torrents from the Freiburg Alps and carries them directly to the Aar. A few small streams, however, come down from the near edge of the Jura and from the low brink of the plain above the shore of the Lake of Geneva.

The neighbourhood of these three lakes is of deep interest both to the historian and the geologist. In historical times the lakes have constituted an important reinforcement of the defences of Switzerland towards the north-west, and beside their shores are the battlefields of Morat and Grandson, where the Swiss in the fifteenth century defeated the invasions of the Duke of Burgundy from beyond the Jura. The geologist looks from Neuchâtel across the water of the lake to where the Alps present a magnificent spectacle on the horizon and then turns to where behind Neuchâtel high on the Jura limestone is a block

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of granite, ice-carried in a former age from the St. Bernard Pass through the opening of the Rhone valley at Martigny. It is likely that not merely ice, but also in later times water was brought from the Rhone sources into the Rhine basin, and that the lake of Geneva has been diverted to the Mediterranean by a revolution in the drainage system. This the Rhine has been robbed of sources in the Pennine Alps which once in the west balanced those of the Grisons still retained in the east.

The Lake of Bienne, in which stands St. Peter's Isle, the scene of the strange hermitage of Jean Jacques Rousseau, has been made to serve a valuable purpose. Like all glacier-fed rivers, the Aar is liable to sudden floods, and the Aar valley along the Jura bottom from Solothurn and Aarau to Coblenz was formerly liable to great inundations. The Aar has therefore been diverted below the confluence of the Saane by a canal into the lake of Bienne, and then brought back from that lake to its former course at Buren, with the result that the destructive rises, being spread over a broad surface, are reduced to easily governable variations. The lakes of Constance, Zurich, and Lucerne perform a similar function for the streams

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which flow through them with the result that great as are the variations in the Rhine levels, and destructive as on occasion have been its floods, the fertility and human works of all the broad lowland north of Basle are saved from what would probably amount to periodic destruction. The only Swiss tributaries of the Rhine which evade the moderating influence of the lakes are the two Emmen streams drawn from the sub-Alpine hills between Thun and Lucerne, the Sihl which comes from a similarly hilly district between the lakes of Lucerne and Zurich, and the Thur which descends from the Säntis group of Appenzell and St. Gallen. These streams bring down at times considerable floods, but fortunately none of them is derived from glacial sources.

In the early Middle Ages, the chief line of traffic from north to south through Switzerland led over the Jura from the head of the Rhine waterway at Basle past Hapsburg to Zurich, then by the lake of Zurich and by the gate of Sargans to Chur, and over the Lenzer Heath and the Rhaetic passes to the navigation of the lake of Como, and so to Milan. A crossway, east and west, followed the interval of plain between the Jura and the outer edge of the Alps from Schaffhausen, and the shores of the lake of Constance

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through Zurich, Berne, Freiburg, and Lausanne to the Lake of Geneva. Lucerne stood aside from both of these frequented paths, and had no general importance until the village communities of the valleys opening to its lake made the federal compact that originated free Switzerland. Four cantons—the Four Forest Cantons—formed the original league of Uri, Schwyz, Unterwalden, and Lucerne. The people of Schwyz, in the valley opening to the lake of Lucerne, at Brunnen, were the most exposed to attack from Hapsburg, and from Zurich, which city was at first often allied with the Counts of Hapsburg; and after the battle of Morgarten, fought on the border of the Schwyz territory beside the little lake of Egeri, the world came to know the whole league by the name of Swiss. A second famous battle took place in the next generation on the shores of the Lake of Sempach, past which through the See Valley comes an alternative approach from Hapsburg to Lucerne. Two other cantons early joined the Federation, Zug, beside the lake of Zug, and Glarus in the neighbouring valley of the Linth, approachable from Schwyz over the Prigel Pass and from Uri over the Klausen Pass. Finally the medieval Switzerland was completed when the cities of Zurich and Berne, domi-



THE RIVER AT ZÜRICH: WINTER

THE AAR

nating the plain outside the mountains, came in. The eight cantons lay wholly within the basin of the Aar.

The intelligence with which Swiss policy was directed is evident from the next changes which were made in the map. Control was obtained over the Gate of Sargans by the purchase of the castle of that strategically important place, but a more significant movement was that made southward through the valley of the Reuss. Here the virility of the people is still evident from the outline of the canton of Uri, whose territory in three several directions extends beyond the original Valley of Uri or Altdorf, which was the home of William Tell. Eastward over the Klausen Pass there is a high pasture, an "Alp," known as the Urner Boden, which is drained eastward to Glarus by a source stream of the Linth. This valley head belongs to Uri, although it is in the basin of the Limmat and not that of the Reuss. Westward in similar way the head of the Engelberg Valley beyond the Surenen Pass belongs to Uri, although lower down it was possessed by the great Abbey of Engelberg, whose territory has been transferred to Unterwalden "Ob dem Wald," and still lower it belongs to Unterwalden "Nieddem Wald." In the

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third, the southward direction, a much greater extension was possible, for conquest was there not of the brother German and Swiss, but of the Romansch people of Urseren, and beyond them of the Italians of the Ticino Valley. Almost immediately after the battle of Morgarten, and the renewal of the federal compact which followed, a mule path was constructed over the hill shoulder south of Schwyz and up the main valley of Uri, over Devil's Bridge to Andermatt, with the result that the people of the Urseren were diverted from their allegiance to the Abbot of Dissentis, and gradually came to speak the alien German tongue, although until within the present generation they retained a certain degree of home rule. Beyond Andermatt the mule path was continued over the St. Gothard Pass. Presently the valleys of the Ticino system, leading down to the Lago Maggiore, were conquered and held by the Uri folk as subject lands, until, long afterwards, the canton of Ticino was constituted a free member of the renewed federation in the time of the French Revolution. The result of these conquests athwart the Central Alps was to give to Switzerland in Urseren a citadel between the neighbouring but independent republics of the Grisons and the Valais.

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When Urseren was opened from the north the main European route from north to south was diverted from Sargans, Chur, and the Rhaetic passes to Lucerne and the St. Gothard. It was not until early in the nineteenth century, when the San Bernardino and Splügen roads were constructed, that the traffic returned for a time to what was nearly its ancient course. To-day the railways which radiate through the Jura to Zurich and Lucerne reunite near Schwyz and thence pass southward beside the Urner See and up the Reuss valley, where tunnels are driven spirally into the mountain slopes to accomplish the steep ascent to the entry of the St. Gothard tunnel at Göschenen. The tunnel runs under the gorge of the Devil's Bridge, under the town of Andermatt, and under the mountain which rises eastward from the St. Gothard Pass, and it emerges at Airolo on the Ticino river. The Urseren valley is now, therefore, forsaken by the through north and south traffic, but it has not returned to its ancient isolation, for, at right angles to the old road across the range a macadamized way leads from the Valais over the Furka Pass through Hospental and Andermatt and by the Oberalp Pass into the Grisons.

The central and uppermost portion of the Aar

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basin will for ever be associated with the remarkable campaign of the year 1799. Suworoff, the Russian general, had conquered westward through northern Italy, and in the absence of Napoleon in Egypt had managed even to violate the territory of France. Returning eastward he sought to join hands over the Alps with another Russian army approaching from the north. The French general, Massena, was entrenched on the Utliberg west of Zurich. Suworoff marched northward over the St. Gothard Pass into Urseren, but his Russian colleague was defeated and Massena was free to throw his forces southward to contest the passage of the Schöllenen Gorge. Thence the fight continued, for notwithstanding their great efforts the French were slowly forced northward through the Urner Loch and over the Devil's Bridge down into the valley of Uri, and thence along the path above the Urner See until they were reinforced at Brunnen and Schwyz. Suworoff now turned up the Muotta Valley and traversed the Prigel Pass into Glarus, where his way was again barred by the French from the north, and he was forced to turn southward up the Linth Valley and over the Panixer Pass down into the valley of the Vorder Rhine, which was held by his allies the Austrians. To-day Urseren

THE AAR

is the fortified citadel prepared as the last defence of Swiss independence.

Modern Switzerland, with its twenty-two cantons of equal sovereignty, presents an appearance both statistically and cartographically which masks the essentially Rhenish origin of the Confederation. Formerly the Valais and the Grisons were independent republics, the one mainly of French, the other mainly of Romansch speech. Geneva was a free city, while the French speaking Vaud and the Italian-speaking Ticino were subject lands, the one of Berne and the other of Uri. Thus the sovereign cantons of Switzerland were purely German in their origin, and during the greater part of their history were confined to the Rhine basin.

Chapter Five

THE UPPER GERMAN RHINE

THE Valley of the Rhine for about seventy miles north of Basle constitutes one of the most remarkable physical features in all Europe. At Basle the river level is 870 feet above the sea, and at Strasburg seventy miles northward it is 470 feet. The flat bottom is some twenty miles across, and is green with orchards, maize, hops and tobacco. To right and to left are the steep fronts of the Black Forest and the Vosges, the former culminating in the Feldberg and the latter in the Belchen, respectively 4,900 and 4,700 feet in height. The lowest slopes as they rise on either hand from the plain are clad with vineyards, then follow dark zones of pine forest, while the rounded tops are covered with highland pasture. The loftier summits, formed of granite, are near the brinks overlooking the Rhine valley, so that the outer slopes, the eastward slope of the Black Forest and the westward slope of the Vos-

THE UPPER GERMAN RHINE

ges, are the more gradual. These outer slopes are of sandstone, and bear the ordinary corn and pasture crops.

In times geologically ancient a great mountain range lay across this part of the continent with a trend parallel to the existing Alps. Through long ages the weather wore down the crests of this range, and finally the rugged foundations were lowered beneath the sea by movements in the earth's crust, and were there buried under deposits of sediment from neighbouring shores. Then in times geologically recent a fresh epoch began. Titanic forces from the south gradually crumpled and raised the rocks which form the Alps, and at the same time the buried foundations of the older range to the north were broken into vast slabs, large as whole provinces, some of which were tilted, some bodily raised, and some depressed. Those that were raised as plateaux were again worn by the weather until the mantle of the newer softer deposits was denuded from the underlying granites and gneisses which had formed the ancient mountains, and these were exposed to the air afresh as mountain groups rising island-like from the surrounding plains of sandstone and clay. One of these upraised slabs has in this manner given rise both to the Vosges and

THE RHINE

the Black Forest. It needed, however, yet another episode in geological history before a way was cleft for the Rhine between the two groups. Parallel cracks, or as they are geologically known, faults, opened through the then united mass in a direction from south-south-west to north-north-east, and the wedge of rock between the cracks collapsed, so that the straight-sided rift lay open which now divides the Vosges from the Black Forest. The steep inward slopes of these mountains are the broken fronts, while the long-drawn bed of the rift was the former summit of the continuous massif. The Rhine entering the rift valley from the south, laid upon the floor of it deposits of gravel, and presently, as the speed of the stream diminished with the shrinkage of the southern ice fields, also sand and alluvium.

The southern entry to the rift valley is nearly closed by the Jura, whose level limestone ridges and plateaux, although equally clad with forest present a marked contrast to the granitic peaks of the Vosges and the Black Forest. Where it overlooks the Swiss plain the Jura is highest, and from the summit line there is a gradual descent northward to the much lower ranges immediately behind Basle. The Rhine approaches the rift valley as we have seen, from the



THE RHINE AT BASEL (GÄLE)

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east by a deep and narrow trench between the Jura and the Black Forest, but westward of Basle a broad interval is left between the outermost of the Jura ranges and the steep foot of the Vosges mountains. This is the famous Trouée de Belfort, or Gate of Burgundy, some twenty miles across and raised only 1,200 feet above the sea. No river traverses it, and from its summit level the water flows away on the one hand to the Rhine and on the other hand to the Rhone. None the less through all history it has been one of the controlling geographical circumstances of this part of Europe.

The highest points of the Black Forest and of the Vosges are near the southern ends of their respective ranges. From such a summit therefore as the Blauen in the Black Forest are visible over the foreground of the surrounding hills and forests not merely the sunken plain of the Rhine to westward, and the blue range of the Vosges beyond, but also over the comparatively low eastern end of the Jura, right across the southern horizon, the snowy heights of the Alps. It is said that in clear weather the Alps are to be seen showing over the top of the Jura from as far away as the Odelienberg on the eastern brink of the Vosges only a little south of Strasburg.

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To appreciate the remarkable character of the topography of this part of the Rhine basin the traveller should go to Breisach on the Rhine, midway between Basle and Strasburg. A bridge of boats here crosses the swiftly flowing, powerful stream. Almost hidden in the green meadows to the west is the fortress of New Breisach erected by Vauban. From the eastern end of the bridge a rock rises steeply which bore the earlier fortress of Old Breisach, and from this rocky point eastward of the Rhine an island of hills made of volcanic stone occupies the centre of the level plain, rising to an elevation of some 1,600 feet about the sea, or 1,000 feet above the plain. This isolated volcanic group, known as the Kaiserstuhl, is covered with vineyards which heighten the contrast with the fields of standing corn and tobacco on the levels around. Westward is the dark front of the Vosges, eastward that of the Black Forest, southward the level tops of the Jura, south-westward the broad opening of the Gate of Burgundy, stretching away to a low horizon beyond. From the northern point of the Kaiserstuhl can be detected occasionally the spire of Strasburg Cathedral.

With the exception of Breisach on its rock foundation, no town has been built on the actual bank of the

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river from Basle for a considerable distance northward. Even Strasburg lies some three miles to the west of it. For the most part the human settlements in the Rift Valley form two belts of dense population, ranged along the foot of either mountain front. On the one hand are Mülhausen, Colmar and Schlettstadt, on the other Freiburg, Lahr and Offenburg.

The reason of this is that along the Rhine itself there is a strip of relative sterility, occupied by gravel and sands, and in part overgrown by forest. In this strip, until recently controlled, the Rhine frequently changed the contour of its windings. Outside, to the right and left, there follow two belts of somewhat lower and moister ground occupied by meadow. Through the western of these the little river Ill takes a course of eighty miles, roughly parallel to that of the Rhine, which it joins to north of Strasburg. Only outside the two meadow strips do we come to belts of marked fertility extending along the plain edges and up on to the skirts of the mountains. This physical arrangement it is which has always held more or less apart the populations of Alsace and of Baden. The Rhine has in short in this part of its course formed in some degree a natural frontier almost ri-

THE RHINE

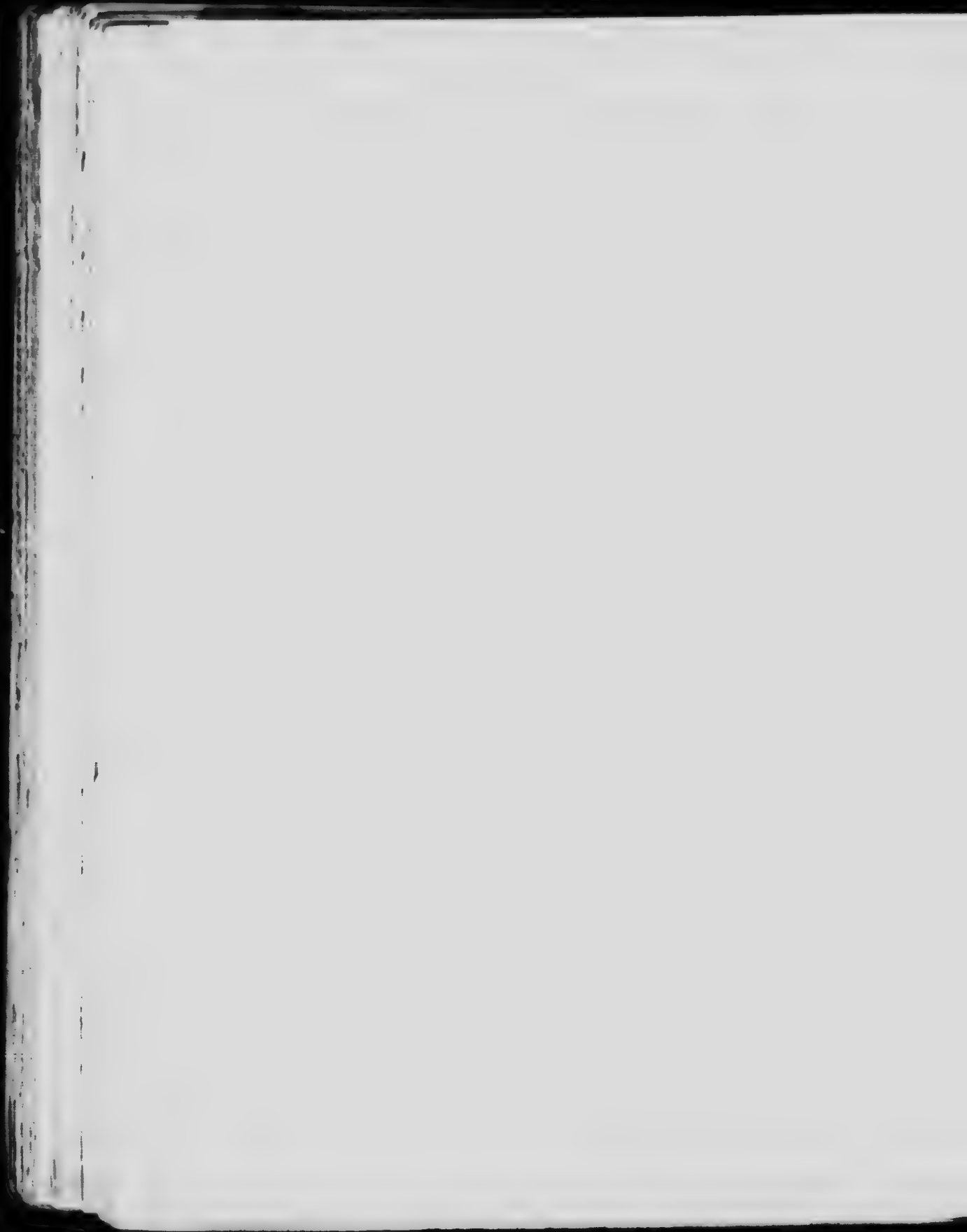
valling in efficacy that of the waterparting of the Vosges.

The Romans first approached the Rhine from the Rhone basin through the Gate of Burgundy, and founded at a point a little eastward of Basle, Augusta in the territory of the Raurici. Basle itself is first heard of in the fourth century, and its position at the head of the boat navigation of the Rhine, and on the great west and east road through the Gate of Burgundy and up the Rhine Valley to the Lake of Constance, rendered inevitable its commercial growth, more especially as the end of the Jura is here relatively low, and easy hillways lead over into Switzerland towards Zurich and Lucerne. Basle became a free city of the Empire, and in the sixteenth century leagued itself with the Swiss Confederation.

Northward of the Gate of Burgundy began the Roman Province of the First Germany, contained between the parallel frontiers of the Rhine and the Vosges, and the next great Roman station was at Strasburg, beside the northern end of the Higher Vosges. Here the Zorn tributary of the Rhine cleaves a way at a height only 1,600 feet above the sea through the western bounding edge of the rift valley. Through this gorge was brought a Roman road from



FREIBURG-IM-BREISGAU.



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Metz to Strasburg, past the station of Tres Tabernæ, which has become the modern Zabern, whence the passage through the Vosges is known to the French as the Trouée de Zaverne. Castle ruins crown the hills on either side of the entry from the low ground, and between them, the road, the canal, and the railway now pass upward together. Strasburg became the seat of a famous bishopric, but the citizens, like those of Basle, expelled their bishop from his secular jurisdiction within the walls, and left to him only the neighbouring countryside, although his spiritual authority still held within the city.

After Roman times the Allemanni, or Swabians, occupied in the south-western corner of Germany the basin of the Aar, the banks of the Lake of Constance, the uppermost basin of the Danube, the basin of the Neckar, and the rift valley of the Rhine northward to Baden Baden, but not to Heidelberg. Their frontier is roughly marked to-day by the boundary between the French and German languages, which follows the waterparting of the Vosges, except that in one valley head on the German side, where is the little town of Markkirch, French is spoken. The plain of Alsace, which was thus Allemannic, was divided into the Nord Gau of Strasburg, and the Sud

THE RHINE

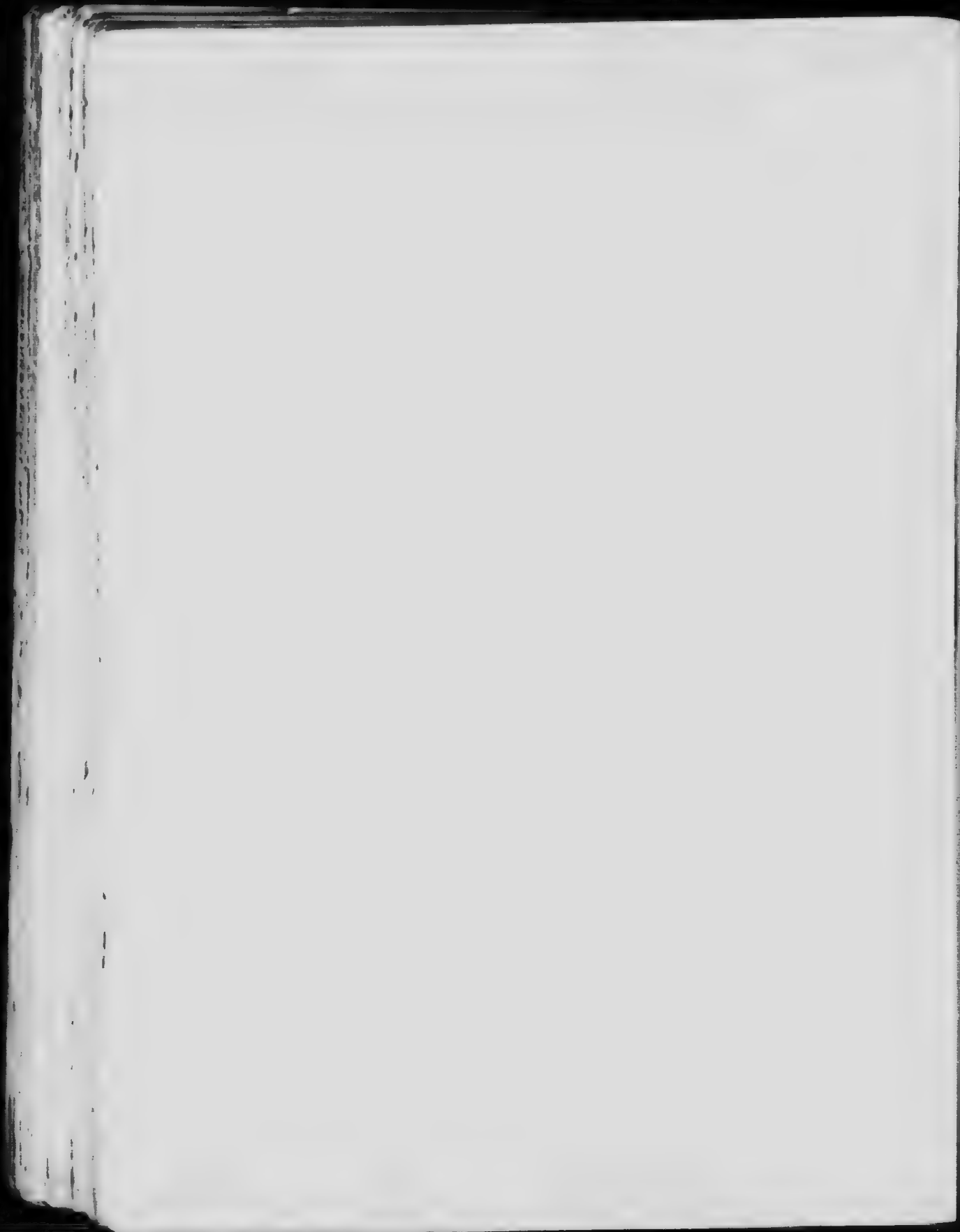
Gau of Mülhausen, while the Breis Gau was the name of the territory on the other side of the river within the angle opposite to Basle.

In the Breisgau the edge of the mountains makes a re-entering curve, the circuit of which is nearly completed by the hills of the Kaiserstuhl. Here on a height above the opening of the Dreisam Valley are the ruins of the Castle of Zähringen, whose counts held jurisdiction over all the Breisgau in the time of the Norman Conquest of England. They founded, on ground nearly beneath their fortress, the city of Freiburg, to-day one of the most attractive of the smaller University towns of Germany. The city walls have been removed, but some of the gates with characteristic Swabian towers remain, and with the beautiful spire of the red sandstone cathedral, built when the Romanesque style was yielding to the Gothic, they impart a still medieval aspect to the place as seen from the Schönberg above. The water of the Dreisam is carried in rivulets along the street sides, adding brightness both for the eye and the ear.

These same Zähringen founded in the next two generations successively Freiburg in Switzerland and Berne. They were rulers also of the Sud Gau on the other side of the Rhine, although Mülhausen it-



OLD TOWER, FREIBURG-IM-BREISGAU.



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self became a free city of the Empire and from the Reformation to the French Revolution was leagued like Basle with the Swiss. When the Zähringen family came to an end late in the Middle Ages, the Hapsburgs took their place, and it was not until the time of the French Revolution that the Hapsburg dominion, expelled much earlier from Switzerland, was finally excluded from the Breisgau.

In the neighbourhood of Strasburg, there descend towards the Rhine not only the Zorn of Zabern, but also the Kinzig and the Breusch, the most considerable directly Rhineward streams of the Black Forest and of the Vosges. Strasburg was therefore a natural market centre for the middle portion of the Upper Rhine valley. To-day the Black Forest railway, picturesquely engineered, is carried from Strasburg, past Offenburg and up the Kinzig valley, past the waterfall of Triberg, to the reverse slope of the mountains, where through the uppermost valley of the Danube it finds a way south-eastward to Schaffhausen and Constance. There is a light railway also across the Black Forest from Freiburg eastward through the gorge of the Höhlen Thal to the Upper Danube. The railways, however, of the Kinzig and Höhlen valleys present steep gradients, and the Orient Ex-

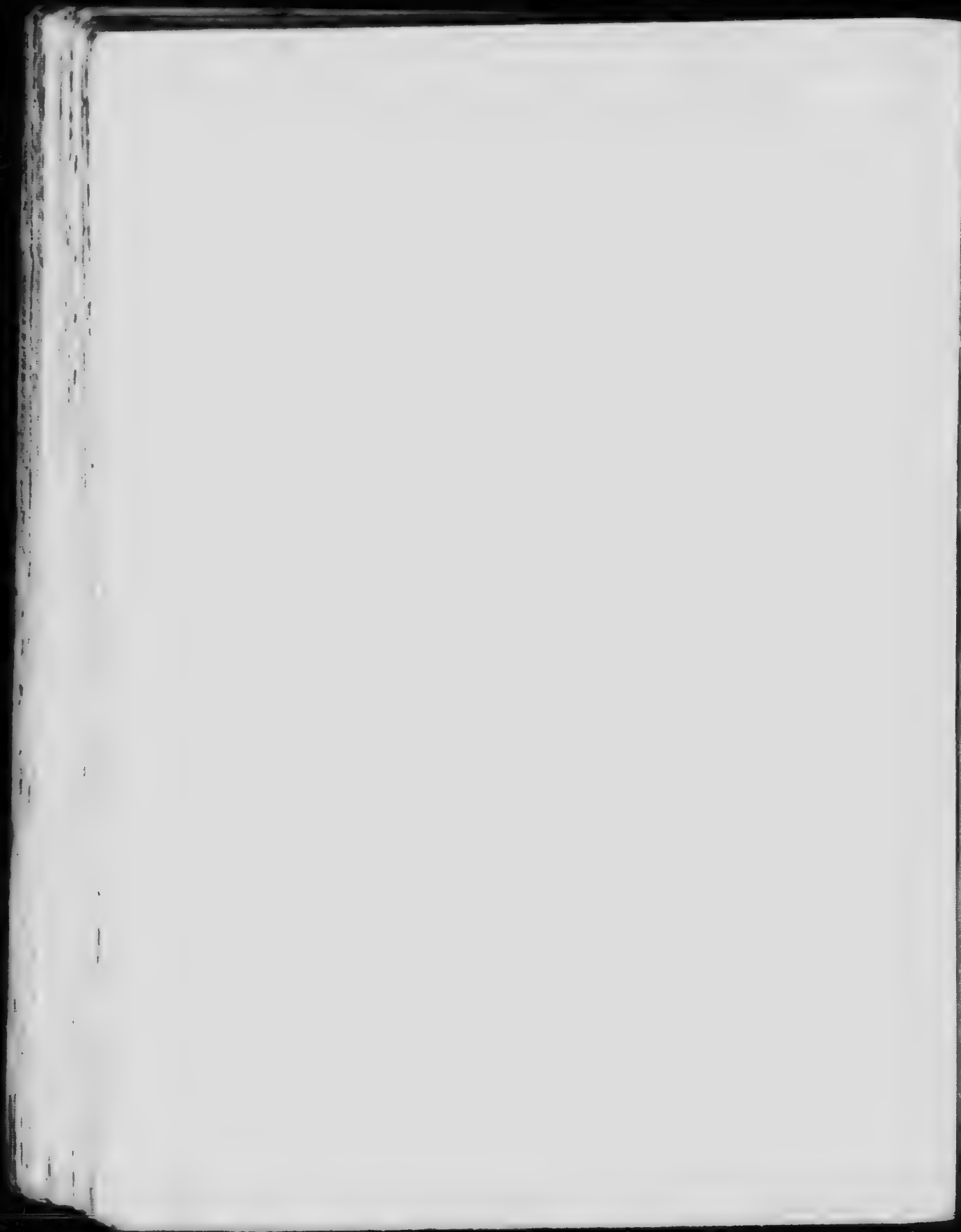
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press on its way from Paris to Vienna and Constantinople, having approached Strasburg by Zabern, turns northward and only finds an exit from the Rhine valley through the eastern range in rear of Carlsruhe, where the mountains of the Black Forest have sunk to merely hill level and easy passages lead over to Pforzheim in the valley of the Enz, which is tributary to the Neckar.

The mountain fronts overlooking the Rhine plain of Baden and Alsace are crowned from point to point with the ruins of many castles. That of Zähringen in the south was the home of a race which has become a mere name in history, but on the same side further to the north, where the little valley of Oos opens to the plain, there still stands high on the northern crest the ruined tower of Hohenbaden, which has given its name to the existing Grand Duchy. Since the Napoleonic reconstruction of Germany, Baden has held in sovereignty all the right bank of the Rhine from Constance around to Heidelberg, except where Swiss territory crosses at Schaffhausen and again opposite to Basle. Hohenbaden was the scene of many a fight in the Middle Ages, until in more peaceful times its counts came down to a lower hill beside the little valley of Oos, and there built the Renaissance palace



THE ALTE SCHLOSS, BADEN-BADEN



THE UPPER GERMAN RHINE

of New Baden. Immediately below this are hot springs frequented by the Romans, and here there gathered a court town and watering place, which now bears the name of Baden Baden. The Baden family presently divided, and the line of Baden Durlach was established on the hill edge of the Rhine valley a few miles northward. Finally when the more spacious fashion of Versailles became the ideal of the little German courts, both Baden and Durlach had to yield precedence to new palaces at Rastatt and Carlsruhe, built out in the plain but not as far as the Rhine bank. Court towns soon gathered round the gates of these princely seats, and though the line of Rastatt became extinct that of Carlsruhe has continued. Not only is Carlsruhe now the capital of a considerable state, but the family of its Grand Dukes represents by lineal descent the ancient family of the Zähringen, Counts of the Breisgau, which is now within Baden territory.

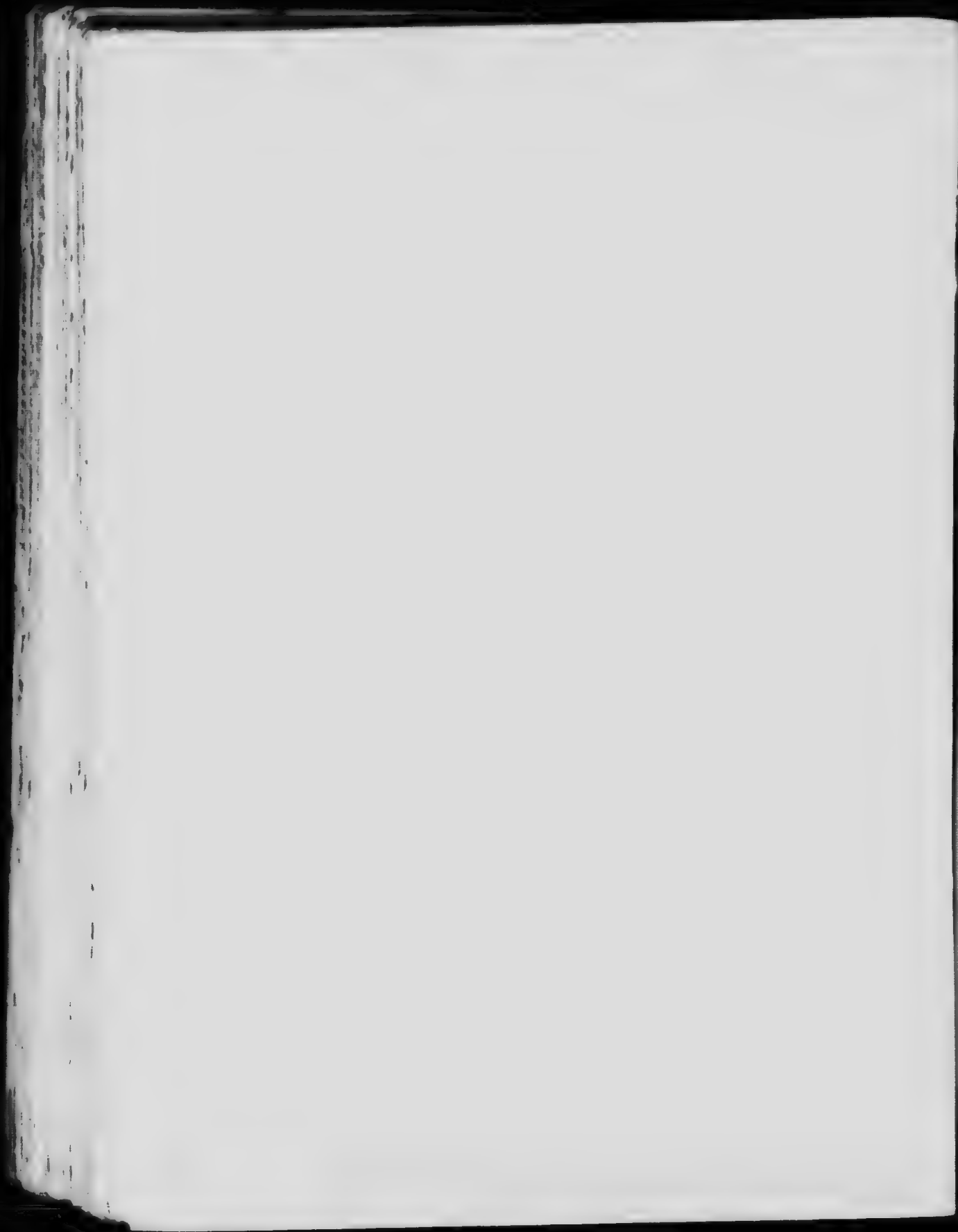
Opposite to Carlsruhe and Rastatt two tributaries, the Lauter and the Quelch, come down from the western hill edge of the Rhine plain. These streams where they traverse the lowland have at different times formed the northern frontier of Alsace. Approximately they mark the limits of the Allemannic dialect as against the Frankish. From the time of

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Louis XIV, Landau on the Quelch was garrisoned by the French, but the Lauter was established as the French frontier at the close of the Napoleonic epoch. It was behind this river that the left wing of the German army gathered in 1870. The line of assembly stretched away along the Franco-German frontier in a north-westerly direction to the river Saar at Saarbruck, and it was necessary that the left wing should be thrown forward in order that the German front might run from north to south and thus face Paris. The first great struggle of the war was, therefore, at Weissenburg on the Lauter and at Wörth, ten miles to the south, both of them where the hill edge looking eastward offered positions for the French defence. Strasburg was besieged, and Pfalz-burg above Zabern was taken, but south of Zabern the opponents were held apart by the higher portion of the Vosges range. Further south the gate of Burgundy offered one more entry to France, but this was not availed of by the Germans, because the fortress of Belfort held out until the end of the war. When peace was made, Thiers permitted the German army to enter Paris in triumph rather than surrender the one fortress which had successfully withstood the invader. As a result that corner of the Sundgau of



STATUE OF SIR FRANCIS DRAKE, OFFENBURG



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Alsace which just infringed on the Rhone basin has remained French, and as nearly as possible the present frontier in this part coincides with the waterparting between the Rhine and the Rhone. A mark of the long French dominion in Alsace still remains upon the map in the canals from the Rhone to the Rhine through the Gate of Burgundy, and from the Marne to the Rhine through the Gate of Zabern. These canals converge to the Rhine at Strasburg, with the intention of tying commercially to France the frontier capital beyond the Vosges.

Chapter Six

THE NECKAR AND THE MAIN

THE steep eastern edge of the broad valley of the Upper German Rhine is prolonged from near Basle to a point far northward of the end of the Black Forest. There are several distinct sections of this edge, for the faults which have let down the bed of the valley have been riven through rocks of very varying character, some of which have resisted the destructive action of the weather with more success than others. From its southern end opposite to Basle, past Freiburg in Breisgau, to the valley of the Kinzig flowing towards Strasburg, the Black Forest presents to the Rhine a naked edge of granite, whereas the eastern slopes down which flow the source streams of the Danube are clad with thick layers of sandstone. Northward of the Kinzig valley to a point a little beyond Baden Baden the edge of the Rhine depression still belongs to the Black Forest, although in this part it is some-

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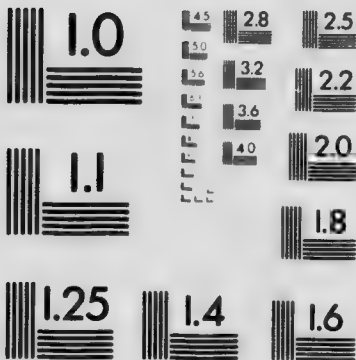
what lower than further south, but the sandstone here advances from the east so as completely to hide the granite, and to form where the faults have broken through it a sandstone instead of a granite escarpment overlooking the Rhine plain. In the next section, from a little north of Baden Baden to a little south of Heidelberg, the edge is at its lowest, presenting to the eye a merely hilly aspect. This part is known as the Kraichgau, and is formed of a shelly limestone of great fertility. Finally, from the Königsstuhl south of Heidelberg northward to Darmstadt, and then sharply eastward to Aschaffenburg the edge rises above the plain once more to mountainous height and is again formed of granite, although with sandstone on the eastward slope. This northern granitic district is the Odenwald.

Two large rivers, the Neckar and the Main, break by gorges through the granites and sandstones of the Odenwald to emerge on the Rhine lowland at Heidelberg and at Aschaffenburg. These twin tributaries drain a large area lying beyond the remarkable edge which we have traced northward from Basle and finally eastward from Darmstadt. To understand the nature of their basins, it is necessary for a moment to have regard to the great neighbour river, the Danube.



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This river is formed by two streams, the Brege and the Brigach, which rise in the heights of the Black Forest eastward of Freiburg, and flow through sister valleys to unite at Donaueschingen, whence the joint river crosses a country of broken landscape to enter a remarkably twisted gorge cut from Tuttlingen to Sigmaringen eastward completely across a range of limestone upland known as the Swabian Jura. Once emergent from this gorge, the Danube turns north-eastward, and follows the foot of the Jura past Ulm and Donauwörth to a point near Ratisbon or Regensburg, where the hill range turns northward but the river bends away from it in a south-eastward direction. It is a range of forested mountains, higher than the German Jura but lower than the Alps, forming the boundary of Bohemia, which thus compels both the Danube and the Jura to conform to its own south-eastward and north-westward lie. Through the depression between the Jura and this border range, the Bohemian Forest, there descends to Ratisbon a tributary of the Danube called the Naab.

The rivers which emerge from the valleys of the Austrian Alps spread over the plain like a great fan, so that the Rhine traverses the Boden See north-westward, while the Iller and the Lech flow north-

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ward to the Danube, and the Isar and the Inn north-eastward. The whole of Bavaria and Swabia south of the Danube is in fact a broad, gently-tilted glacis in front of the mountain rampart, and the river is the ditch at the end of the slope. Beyond, on the north bank, the ground rises again to form the Jura plateau-range, and this ends in a sudden brink overlooking the lowlands of the Neckar and the Main. Thus the Danube from Sigmaringen to Ratisbon follows the line along which the Bavarian plain descending northward from the edge of the Alps meets the shorter slope descending southward from the brink of the Jura. The bend of the Jura, where this range turns from north-eastward to northward in the neighbourhood of Ratisbon, lies opposite to the great angle made by the Alps and the Bohemian Forest, through which the Danube flows into Austria and to Vienna.

Two tributaries of the Danube there are, the Altmuhl and the Wornitz, which in addition to the Naab enter it from the north, respectively at Kelheim and at Donauwörth. But unlike the Naab, which flows southward parallel to the Jura, these two rivers cross that range in winding gorges which resemble the gorge of the main river between Tuttlingen and Sig-

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maringen. A glance at the map will show that the sources of the Altmühl and the Wornitz are insinuated, beyond the Jura brink, between the basins of the Main and the Neckar. The Main itself between Bayreuth and Bamberg crosses this same Jura in a contrary direction, and emerges westward from its gorge between the castle ruin of Banz high on the hill to the north and the Church of the Fourteen Saints high to the south. It will be remembered that the Rhine also, between Eglisau and the Swiss Coblenz, makes a similar westward traverse of the limestone range, and far away south-westward the Rhone breaks through near the point where the Swiss Jura swerves from the outer limestone edge of the Alps of the Dauphiné.

Six gorges then there are, three leading westward and three leading eastward, which traverse the Jura belt of upland at various points of its long course through Switzerland and South Germany, but of these the Rhine gorge, where it descends to its junction with the Aar, has the most significance, for here the tilt of the range is reversed, and whereas the Swiss Jura rises ridge after ridge to a south-eastward brink looking towards the Alps, the German Jura has a north-westward and westward brink looking away

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from the Alps, over the Neckar and Main basins. Moreover, there is a change at the Rhine in the configuration of the surface, for whereas the Swiss Jura is formed of a number of parallel ridges and valleys, the German Jura is a belt of plateau. The Jura diminishes in height as it passes from Switzerland into Swabia, and diminishes again as it enters Franconia from Swabia. In Switzerland the range is much wooded, but in Germany usually woodless and barren, except where the rivers have trenched valleys below the general surface. In the Franconian Jura, moreover, there are many caverns and cliff-sided pits, for the limestone is there dolomitic.

The Naab river flowing southward to the Danube at Ratisbon has its sources in a group of granitic mountains known as the Fichtel, and in this same group, flowing eastward, northward and westward rise three other notable rivers, the Eger of Bohemia, the Saale of Saxony, and the Main of Franconia. Dividing their several basins are four hill and mountain ranges radiating from the Fichtel, the Bohemian Forest south-eastward, the Erzgebirge or Ore Mountains north-eastward, the Thuringian Forest north-westward, and the Jura south-westward. The Thuringian Forest as its north-western end approaches the

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north-eastern extremity of the great Rhine Schist Plateau, which is pierced by the Rhine gorge at Bingen. Between these convergent ranges, the Thuringian Forest and the Rhine Schist Land, there is a passage which gives northward exit to the Weser river flowing to the North Sea, and southward of this passage, between the sources of the Weser and the basin of the Main, are two mountainous masses of volcanic rock, the most extensive volcanic remains in all Germany, the Rhön and the Vogelsberg. The Rhön all but touches the Thuringian Forest, but the valley of the Werra, one of the source streams of the Weser, is cut between them. The Rhön on the other hand extends without a break south-westward into the sandstone Spessart, which occupies the second of the great southward loops of the river Main. The Spessart spreads on, being separated only by the gorge of the Main, into the sandstone eastward slopes of the Odenwald whose lower granitic foundations emerge only along the Rhineward edge.

Thus the basins of the Main above Aschaffenburg, and of the Neckar above Heidelberg are ringed completely round by heights, save for a few river-cut passages. North-westward the sandstone Spessart, set like a saddle between the volcanic Rhön and the



HEIDELBERG AND THE NECKAR.



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granitic Odenwald, is pierced by the Main, while the southernmost corner of the Odenwald is notched by the Neckar, although the much lower Kraichgau is close at hand, offering an apparently much easier passage. South-eastward the Jura is pierced at four places where the Danube and its tributaries, the Wörnitz and the Altmühl, rob the Neckar and the Main of small areas of cis-Juran drainage, and the Main, in revenge, takes sources from the Fichtel beyond the Jura. The Weser also, in the extreme north, robs a little Franconian water.

Between the Spessart and the Jura, following a course from north to south-west which curves in sympathy with the curve of the Jura, is a lower belt of upland, made of sandstone and beautifully wooded. Although a distinct feature of generally similar character from end to end, this range has no general name, and may perhaps best be distinguished from the rock of which it is formed as the Keuper Sandstone range. Like the Jura it presents a steep brink westward and north-westward, and a more gradual slope eastward and south-eastward. It commences in the north at the foot of the Rhön, crosses the Main between Bamberg and Schweinfurt, forms the Frankenhöhe on the boundary of Bavaria and Würtemberg, where the

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Wörnitz and the Altmühl rise in it to flow exceptionally to the Danube, bends northward a little in eastern Würtemberg to the neighbourhood of Heilbron, thus occupying the bend of the river Kocher, and finally resumes its previous trend past Stuttgart, and so, gradually narrowing, disappears in the angle between the Jura and the Black Forest. Between the Keuper sandstone and the Jurassic limestone, in deep valleys sunk between the hill ranges, are the Neckar where it flows north-eastward past Tübingen, and the Regnitz where it flows northward past Nürnberg to join the Main at Bamberg.

Between the edge of the Keuper range and the sandstone hills of the Odenwald, Spessart and Rhön, there is a belt of lower and more fertile country whose soil disintegrates from a shelly limestone. This favoured strip commences on the very brink of the Rhine Valley where it is lowest in the Kraichgau, extends north-eastward across the Neckar at Heilbron, and through the Hohenlohe plain, and across the Main at Würzburg to the Grabfeld at the foot of the Rhön. This is a land of vineyards which compete with the vineyards of the Rhine valley itself, for not merely has the soft limestone characteristic of the district been worn to a relatively low surface, but

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the river valleys are further trenched into this surface, and the slopes are sheltered. In other words, it is the most protected part of the generally protected basins of the Neckar and Main. The neighbouring Danube, although, of course, following the lowest line in the broad upland plain between the Alps and the Jura, flows at a much higher level than these two rivers, a fact which becomes very evident when we consider that the Ludwig's Canal leaves the Danube at Kelheim, 200 miles from the river source, with an elevation of more than 1,100 feet, and utilizing the Altmühl and Regnitz Valleys descends past Nürnberg to join the Main at Bamberg, less than sixty miles from the river source, at a level of only 750 feet. Ulm and Sigmaringen, which stand on the Danube, far above Kelheim, at heights of about 1,500 feet, have their nearest points in the Upper Neckar valley on the other side of the Jura at elevations of only some 700 feet.

Historically Swabia of the Neckar valley and Franconia of the Main present a remarkable contrast. Along the high brink of the Swabian Jura are detached limestone crags with many ruins of medieval castles. Two of these, Hohenzollern and Hohenstaufen, have been the cradles of imperial dynasties,

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the one in early, the other in recent history, but in the later Middle Ages they were bases of princely independence, so that in all Germany there was no land so torn into pretty jurisdictions as this land of Swabia. In Franconia, on the other hand, the dominant political powers were of ecclesiastical origin. From the great missionary centre of Mainz priestly foundations were established at Aschaffenburg, at Würzburg, and at Bamberg, so that the Main came to be described as the Priests' Alley. In the progress of centuries Aschaffenburg grew to be the centre of the chief portion of the temporal possessions of the Archbishops of Mainz, and Würzburg and Bamberg became Bishops' seats with sway over temporalities almost as important. So it continued in Franconia until the Napoleonic conquest, for it must be remembered that Bavaria formerly lay wholly in the basin of the Danube about Munich and Ratisbon and in the Upper Palatinate of the Naab basin. Important secular Principalities were established in Franconia only, at Bayreuth on the uppermost Main and at Ansbach in the Frankenhöhe, but Nürnberg, Schweinfurt, and Rothenburg were free imperial cities. Nearly the whole main basin was annexed to Bavaria a hundred years ago, and now constitutes the circles

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of Upper, Middle and Lower Franconia in that kingdom.

In Swabia, towards the end of the Middle Ages, a Count of Würtemberg gradually accumulated power and established his residence at Stuttgart in a little valley of the Keuper Hills opening to the valley of the Neckar at Cannstadt. Then the market centre of the region gathered to the gates of the palace, and the court town of Stuttgart, although placed away from the main line of traffic, came by degrees to be the chief mercantile city of the Neckar basin, as the free town of Nürnberg is of the Main basin, princely favours balancing in the one case municipal privileges in the other. Würtemberg was not raised to the rank of kingdom until Napoleon had intervened to crush other small principalities of the neighbourhood, so that in 1814 territory was annexed to it extending beyond the Jura and across the Danube to the Lake of Constance at Friedrichshafen. Apart from Würtemberg, the former constellation of Swabian lordships is now represented only by the little State of Hohenzollern, stretching from beyond the Jura brink at Hohenzollern Castle to beyond the Danube at Sigmaringen. Hohenzollern pertained for centuries to a cadet branch of the Prussian Royal

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Family, and fell to the Prussian kingdom and became a detached Prussian province only in the middle of the last century.

The contrasts between the Neckar and the Main basins are due partly to physical and partly to historical causes, and among the historical not least to the fact that Swabia was in some degree Roman. That part of the Main course which runs northward past Aschaffenburg marked the imperial frontier during the centuries when the frontier was in advance of the Rhine, and from the Main a curiously straight line of bounding entrenchment was established across the Hohenlohe plain and over the Keuper hills for more than sixty miles southward to Lorch in the direction of Ulm, and there the frontier of Rhaetia was intersected. The Rhaetic province was approached by the Romans directly from the south over the Alpine passes, not from the west across the Rhine, and the entrenchment, therefore, turned suddenly eastward from Lorch along the foot of the Jura in such manner as to include within Roman territory the fertile basin of Ries, sunk with steep sides into the limestone. Thence the boundary crossed the Jura to the Danube near Kelheim. Thus the modern Swabia and Bavaria, on the Neckar and Danube, lie almost wholly

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within the Roman boundary, while Franconia, on the Main, lies without it.

Placed in the heart of central Europe, and ringed round by granitic heights with deeply cut gaps between them, it was inevitable that important lines of communication should traverse the Main and Neckar basins. From Aschaffenburg one such line runs eastward up the Main valley to Bamberg, and then divides, one branch ascending the Upper Main and crossing to Saxony, where the Thuringian Forest sinking somewhat as it approaches the Fichtel nucleus offers a passage, the other turning up the Regnitz valley to Nürnberg, and there again bifurcating south-eastward through Ratisbon and so by the Danube to Vienna, and southward over a depression in the Jura to the Danube at Donauwörth and by Augsburg over the Brenner Pass into Italy. Nürnberg and Bamberg are cities of the Main basin which should have profited perhaps equally by this successive branching of the natural paths, but Bamberg was under episcopal rule, whereas Nürnberg was a free city of the empire. As a result Bamberg is now a small town of pleasing ecclesiastical aspect, and Nürnberg one of the most remarkable cities in Europe, for it has managed to combine modern indus-

THE RHINE

trial prosperity with the maintenance of the historic monuments and aspect which record a similar prosperity in the Middle Ages. Engirt by still almost complete bastioned and towered walls, crowded with houses rising narrowly and high to pointed gables, dominated by its castle and by churches of distinctive aspect with choirs higher than the naves, Nürnberg still reminds of the time when absolutely it may not have been so wealthy as now, but relatively to the then importance of its rivals was the German city of most significance alike as regards commerce and art. The country around having a relatively poor soil is but thinly peopled.

Swabia also has its main way which is a part of the through east and west route of European travel, but on the other hand it has no important branching of roads, and as a consequence no city of the same historic importance as Nürnberg, for as we have said Stuttgart is merely a court foundation and relatively modern. From Ulm on the Danube the road formed by the union at Augsburg of the way from Vienna and the way from Italy is carried northward by a pass in the Jura and down into the angle of the Neckar Valley where this turns away from the foot of the limestone edge. Here is Esslingen, a town

THE NECKAR AND THE MAIN

which from its position has necessarily had some small importance both in medieval and modern times. For a short distance the road must follow the Neckar through the opening made athwart the Keuper Hills to Cannstadt, but from that point it is free to swerve westward over the low country of the shelly limestone to Pforzheim, and thence by an easy descent over the merely hilly brink of the Kraichgau into the Rhine Valley at Durlach and Karlsruhe, the former and the present capitals of the State of Baden. From this point, as we have already learned, the great through way turns southward to Strasburg, and then utilizing at Zabern the gap in the western edge of the Rhine Valley goes forward to Lorraine and Paris. Heilbron at the head of the Neckar navigation had a certain early significance, but like Würzburg on the Main it has lost the relative importance which it obtained during the centuries of boat navigation. Stuttgart now ranks among the greater cities of Germany, to some extent, no doubt, because it is the political capital of the kingdom of Würtemberg, but mainly because the Swabian people of the Neckar basin have developed an industrial life incomparably richer than that of the Franconian basin of the Main. Landed property is here much subdivided, and the industries

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are largely those which are dependent on skilful labour rather than on natural facilities. The Neckar basin belongs in other words to the same industrial region as the Black Forest with its clock-making, and the Swiss valleys with their textiles. The industries of all three are largely carried on by the spare energy of the cultivators of the soil.

One of the earliest canals of Europe was the Ludwig's Canal from Kelheim on the Danube past Nürnberg to Bamberg on the Main, but it has little present significance. In the face of railway competition inland navigation can prosper only when conducted in barges of large burden, through waterways, therefore, of considerable magnitude. The Main in the summer time often shrinks to a mere rivulet, and the works needed for the construction of a trunk waterway through Central Europe would therefore have to extend from Frankfurt, or at any rate from Aschaffenburg on the Main to Passau on the Danube. At present the greater navigation stops at Mannheim, at the mouth of the Neckar, and at Frankfurt, and from these points the freight is distributed by rail through the Franconian and Swabian basins. The railways of these basins are State-owned, and both Würtemberg and Baden derive revenues from the

THE NECKAR AND THE MAIN

handling of the traffic, and are, therefore, little likely to afford the capital for the construction of a great trunk waterway into Austria. Should the future have in store a revolution in the territorial frontiers of Central Europe, it is possible that men might seek to supply coal to Vienna by a new waterway from the Saar and the Ruhr.

Chapter Seven

THE RHEINGAU

THE rift valley of the Upper Rhine is closed at its lower end by features which present a certain symmetry with those of the upper end. As the Jura crosses obliquely from the south-west, so does the Taunus; and as the Jura leaves a broad entry between itself and the Vosges, so does the Taunus leave a broad exit between itself and the Odenwald. But whereas the Burgundian Gate gives entry at the upper end from the south-west, the Hessian Gate gives exit at the lower end towards the north-east. To complete the symmetry it may be noted that the Rhine entering from the east at Basle bends closely round the Black Forest, keeping at first to the eastern side of the rift plain, but at the lower end the river keeps to the western side of the plain, clinging to the foot of the western hills as it rounds the salient on which stands Mainz. The situation of Mainz, although on the inner side of the curve, corresponds therefore in some degree to that of Basle.

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At their northern end the parallel walls of the rift valley are formed by mountain masses which rise to only half the height of the Vosges and the Black Forest, but the Feldberg in the Taunus measures two-thirds of that height. From the last-named summit on a clear day, or even from such a minor height as the Platte above Wiesbaden, the whole of the central landscape of the Rhine basin lies visible. Immediately below is the forest-slope, and beyond this the vineyards of the Rheingau, descending to the glittering water of the Rhine and the Main where smoke clouds mark the positions of Mainz and Frankfurt. Then beyond, towards the south-western horizon is a great isolated hill, the Donnersberg, or Thunder-hill, and to the south-east at the corner of the Odenwald above Darmstadt is the Melibocus. Between these summits, extending far away into the dim distance, lies the level plain of the rift valley. Westward of the Donnersberg a depression indicates the valley of the Nahe, and away eastward up the Main valley are the wooded heights of the Spessart.

A comparison of this description with the map will make evident the truly metropolitan character of the knot of valleys and roads at the northern end of the Rhine rift valley. Two roads descend that valley it-

THE RHINE

self, one at the foot of either bounding range; these roads come out respectively at Mainz and Frankfurt. Two other roads enter from the south-east, through gorges cut into the Odenwald and the Spessart; these thread the Main and Neckar valleys, which open to the Rhine plain at Aschaffenburg and Heidelberg. Yet other roads approach Frankfurt from Hesse and the north by the valleys of two of the Main tributaries. On the one hand the Kinzig comes down from the low ridge connecting the Rhön to the Vogelsberg which forms the water-parting between the Kinzig and the Fulda tributary of the Weser. On the other hand, the Nidda, drawn chiefly from the western flank of the Vogelsberg, flows through the fertile depression of the Wetterau between the Vogelsberg and the Taunus. The Wetterau is prolonged northward by that part of the Lahn valley which contains Giessen and Marburg, and the way beyond Giessen lies open to Kassel, where the alternative road branches off to gain the Main by way of the Fulda and Kinzig valleys. From Kassel the navigable Weser flows through the centre of the old Saxony to the North Sea. Thus from north-west, east, and south-east, the ways gather to the basin of Frankfurt which began in Italy, on the Danube, on



THE CATHEDRAL, WORMS.

THE RHEINGAU

the Elbe and on the North Sea. Southward by the rift valley of the Rhine itself and through the Gate of Burgundy, is the great natural way down the Rhone to Marseilles and the Mediterranean, while from Bingen, twenty miles west of Mainz, where the Rhine turns northward through the gorge which it has trenched through the Taunus, the way lies open to Cologne and the Netherlands. Finally at Bingen the Nahe joins, through whose valley there are roads to Metz and Paris.

It would seem inevitable that one of the great capitals of Europe should have grown up in this neighbourhood, and yet it has not been so. Frankfurt is an important city, but as metropolitan populations are measured, Frankfurt is still small, notwithstanding its recent rapid increase. former rival, Mainz, is now a city of merely secondary rank in Germany. Owing partly to natural causes, but still more to historical accidents, a number of centres have here competed destructively and have prevented the rise of any one of their number to permanent dominance.

At first sight, no doubt, it would seem that the situation of Mainz at the bend of the Rhine, at the confluence of the Main, and not very far below the

THE RHINE

confluence of the Neckar, presented the necessary advantages for winning the primacy. We must remember, however, that at Bingen, where the Rhine enters its gorge, there were formerly rapids, due to rocky obstruction, which broke the through navigation from the sea. In far remote ages the Rhine flowed over the site of Mainz, high above its present level, but in that great epoch of geographical revolution when the Alps were making and the centre of Europe was being broken into contrasted blocks of plateau and plain, a crust movement took place along the line of the Taunus, as the result of which gravel beds formed by the Rhine were lowered until below sea level at Mainz, whereas in the neighbourhood of Bingen they were raised until 500 feet above it. This differential movement appears to have been so slow that the Rhine maintained its northward course, trenching a way through the gradually rising tableland. At Bingen some trace of the great dislocation remained from geological into historical times, and the obstruction causing the rapids has only been fully removed by modern engineering.

The Rhine was the earlier Roman frontier, but from Basle in the south as far as Speyer or Spire there is no city of Roman foundation immediately

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on the banks of the river. Further north, however, where the river approaches the western hilly ground, are three Roman cities—Spires, Worms, and Mainz—and of these the most important was the last named. Mainz or Moguntiacum became the capital of the Roman Province of Germania Superior.

The advantages of the situation of Mainz are not exhausted by the facts that it lies nearly opposite to the confluence of the Main and the Rhine, and that the Rhine here changes its direction. There is firm ground close to the water's edge, not only on the left bank but also on the right. Therefore the river cannot just here spread in flood, and solid foundation is offered on either hand, not only for buildings and wharves, but also for the approach of roads, so that here is a natural bridge place. The foundations still exist of the Roman bridge and of the Roman castle for its protection on the hill above the city. From Mainz, Roman territory spread in the days of the Emperor Domitian beyond the Rhine, and the suburb, Castel, was therefore built as a bridge head on the east bank.

The later Roman frontier was fixed by a line of entrenchment in continuation of that which we have studied where it crosses from south to north the

THE RHINE

Neckar basin. Thence for a space the Main was the frontier, but the Pfahlgraben recommences where the Main emerges from the Spessart, and running northward encloses the fertility of the Wetterau. Returning towards the Rhine, it follows for some distance the summit of the Taunus before bending again northward in such manner as to retain for the Empire the right bank of the Rhine gorge until beyond Coblenz. The remains of this entrenchment where they traverse the forest along the height of the land may be visited by the mountain railway from Homburg north of Frankfurt. Just within the line of mound at this point is the restored ruin of the Roman castle of the Saalburg. Wiesbaden, four miles from Mainz beyond the Rhine, became, on account of its hot springs, a Roman suburban centre.

When the Roman organization broke down and the barbarians crossed the river, Worms for a short time obtained the premier rank. It became the capital of the Burgundians before they passed onward through the Burgundian Gate at the other end of the river valley into the Rhone basin, which became their permanent home. Here at Worms in this epoch were enacted the heroism of Siegfried, the treachery of Hagen and the revenge of Chriemhilde, as recorded



THE CATHEDRAL, MAINZ (MAYENCE).

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in the Nibelungenlied. But Mainz regained, and for long kept the lead, from the time that its bishopric was raised to the rank of archbishopric when the missionaries were converting Trans-rhenane Germany north-eastward, eastward, and south-eastward. It was the Saxon, Winfried, otherwise known as St. Boniface, who accomplished this great change in the status of Mainz, a fact to be paralleled with the Irish missionary efforts in Switzerland as a remarkable return up the great river from the islands in the sea of the Christianity which they had first received down its waters. Winfried was the son of an English wheelwright, and assumed for his armorial bearings a pair of wheels, which are the arms of Mainz to this day.

The citizens of Mainz were early in contest with the tyranny of their ecclesiastical rulers, and at first with marked success. In the year 1254 Mainz allied herself with Worms to found the great league of the Rhenish cities, which presently included free and fortified towns from Basle in the south to Cologne in the north. For two centuries commerce prospered, and the capital of the League became known as the Golden Mainz. But in 1462, in a fresh struggle with its archbishop, the city finally lost its freedom and so

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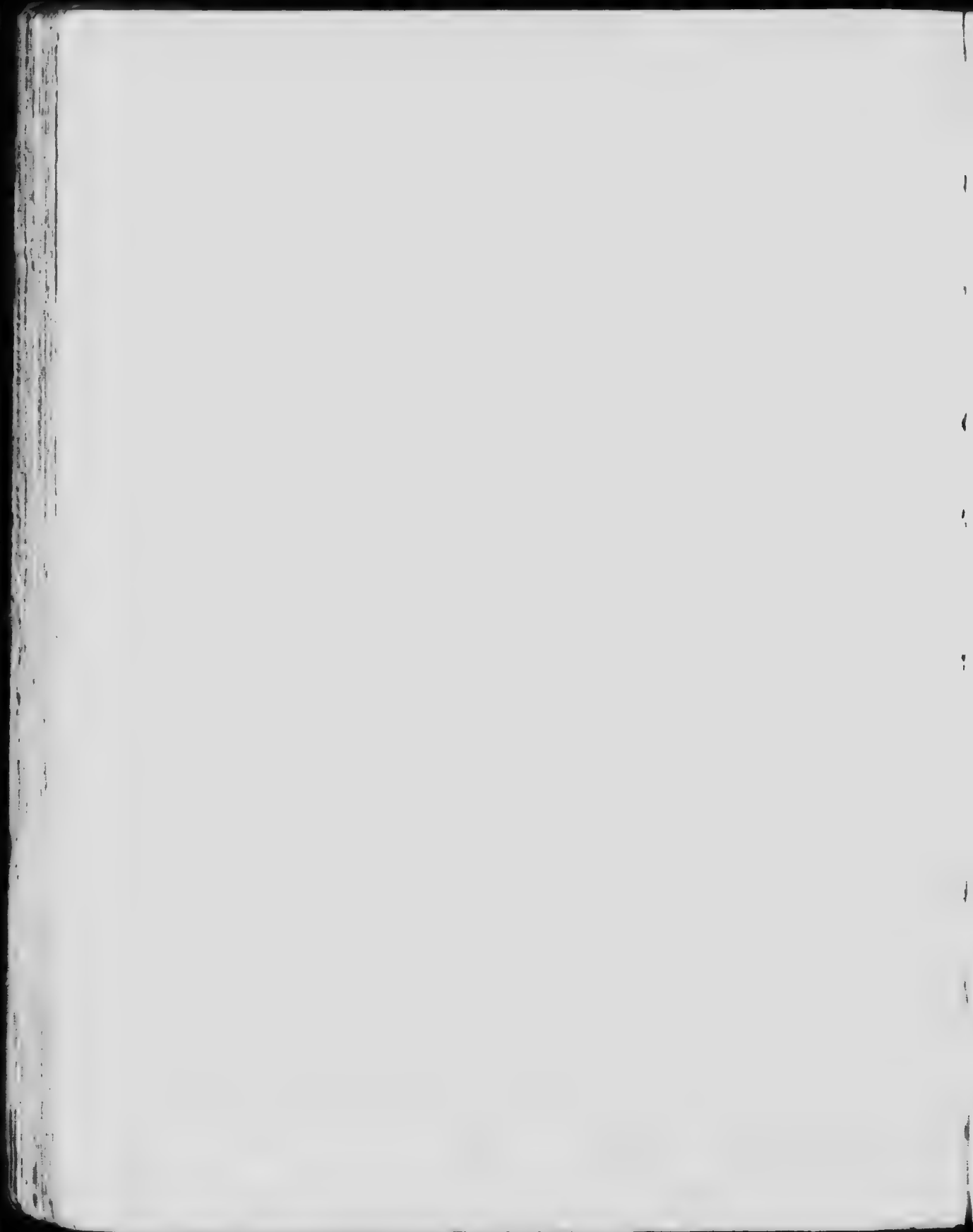
its initiative. The free imperial city of Frankfurt on the Main, long a rival, now obtained superiority, and Mainz remained great only as the seat of the Primate Archbishop of Germany, one of the three Ecclesiastical Electors of the Empire. The great cathedral, however, Romanesque and Gothic, remains as a memorial of its former wealth.

During the seventeenth century Mainz was many times besieged, and at the commencement of the Wars of the Revolution was captured by the French, for the position was no less important in military than in ecclesiastical strategy. During the nineteenth century Prussia and Austria supplied the garrison jointly which held the fortress for the German Confederation, and it was not until the time of the War of 1870 that the ramparts were pulled down and a ring of outlying forts substituted, so that Mainz was able to expand and to begin afresh a career of commercial prosperity.

Frankfurt, like Mainz, was placed on its river at a point where both banks present solid ground. Over the bridge of Frankfurt, hardly swerving from the straight direction, leads the great road from north to south which comes from Giessen and Marburg through the Wetterau and strikes away to Darm-



OPPENHEIM.



THE RHEINGAU

stadt, and then along the foot of the Odenwald to cross the Neckar at Heidelberg. To Frankfurt also converge the ways from the Kinzig and Fulda valleys, and from Aschaffenburg and the Main.

Frankfurt was apparently not of German origin, and is first heard of in the time of Charlemagne, but then it speedily came to be recognized as the capital of the Empire. The Emperors were chosen in Frankfurt until the Empire ended in 1806, and after a time they were crowned in Frankfurt Church, instead of at Aachen. But during the Great Interregnum of the thirteenth century, Frankfurt won a position practically independent, and was presently accorded the privileges of a free imperial town. Still greater advantage was granted to it when the Autumn Fair and the Easter Fair received imperial sanction, for as in the other countries of Europe, medieval German trade was chiefly conducted by means of periodic fairs, the like of the great Russian Fair at Nijni-Novgorod, which still continues. Frankfurt continued to prosper, for there was no local tyrant to stop the initiative of its burghers, and after the Napoleonic period it emerged, as did the three Hanseatic towns of the North, a sovereign city state of the German Confederation. In 1866, having

THE RHINE

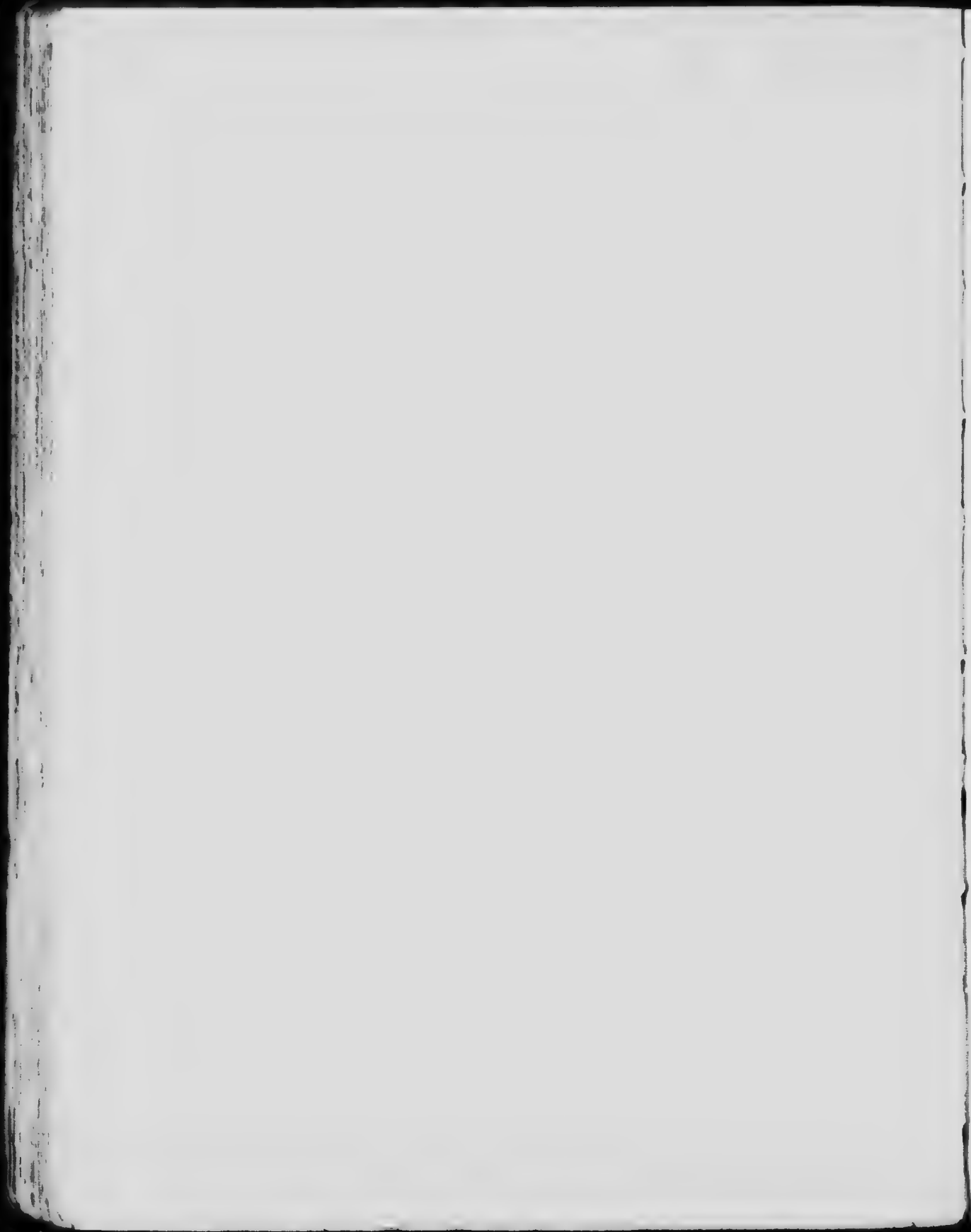
resisted the formation of the North German League under the control of Prussia, it was annexed by that Power and included in the Province of Nassau. Frankfurt has lost its independence, but on the other hand the customs frontiers have been removed from its environment, and it has become a great centre of the German railways. Frankfurt has now some 350,000 inhabitants, and is incomparably the largest town of the Upper Rhine Basin.

Above Frankfurt, at the point where the Main valley opens, is the town of Aschaffenburg at the foot of the Spessart, with a four-towered castle, which was formerly the chief country residence of the archbishops of Mainz. It was in fact the second ecclesiastical centre in the great Alley of Priests from Mainz up the Main to Würzburg and Bamberg. Since the Napoleonic reconstruction, and the secularization of the ecclesiastical territories Aschaffenburg has belonged to the Franconian dominions of the Bavarian Kingdom.

Between Aschaffenburg and Frankfurt are two towns standing on opposite banks of the river, Offenbach and Hanau, which present curious histories, for the industrial prosperity of Hanau is due to a settlement of Protestant Dutchmen, and that of



THE ROMER, FRANKFURT



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Offenbach to a settlement of Huguenot Frenchmen. These places, industrial rather than commercial, belong in other words to the category of the little industrial towns and villages of the Neckar Basin, the Black Forest, and the Swiss Mountains, in that the industries are based on the skill and character of their inhabitants, rather than on the advantages of local situation.

At the corner of the Odenwald, where the edge of the high ground turns from westward to southward, stands the modern court town of Darmstadt, which first rose to importance when in the Viennese resettlement of Europe after the fall of Napoleon, the district on the other side of the Rhine behind Mainz was added to the dominions of the Grand Duke of Hesse. Heidelberg, occupying a far finer natural position, had a similar importance in older times, for it was the residence of the Palatine Electors who ruled the Rhine valley of this part and the neighbouring heights on either side. The remains of its Renaissance castle, high on the left brink of the valley above the low-placed town, speak both of the artistic wealth of the Renaissance times in the German Rhineland, and of the unscrupulous statecraft of Louis XIV., who reduced it to ruins when his troops

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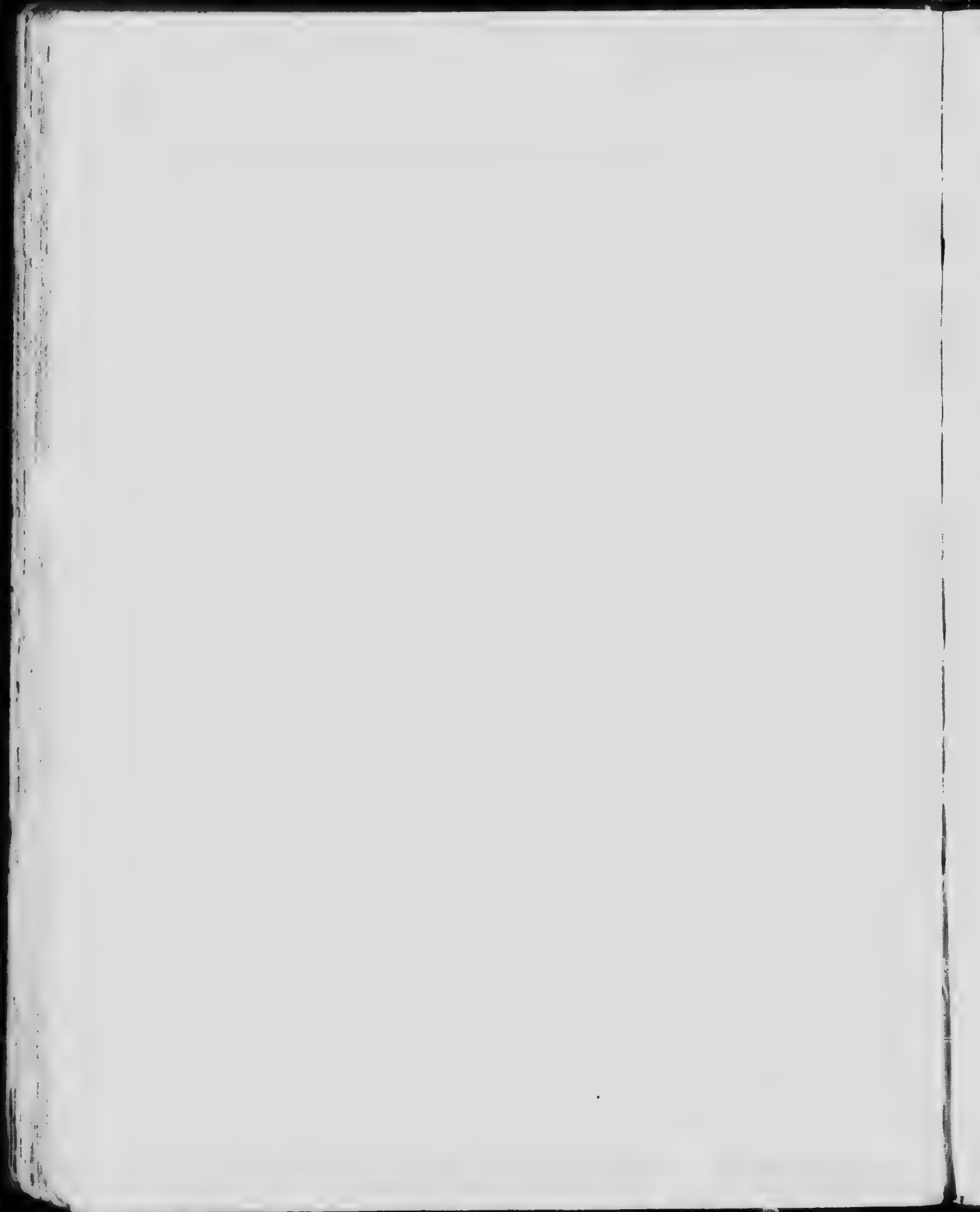
annexed Alsace and ravished all the neighbouring lands beyond his border.

Heidelberg ceased to be the residence of the Electors Palatine after the destruction of the castle; and after a brief sojourn at Düsseldorf in their county of Berg on the Lower Rhine, they fixed their residence in a new town in the plain, in the angle between the Neckar and the Rhine. In the Napoleonic chaos the Electors Palatine vanished, but Mannheim has in recent years risen afresh to be the rival of Frankfurt, for since the removal of the obstruction at Bingen and the inauguration of a system of river traffic in which powerful tugs draw barges of great burden, Mannheim has become one of the chief ports of Europe, and the point of distribution throughout Southern Germany of such bulky articles of food and raw material as wheat, coal, and petroleum. Ludwigshafen, on the left bank opposite, within the detached Bavarian Rhenish territory, shares in the prosperity of Mannheim.

Spires, like Worms and Heidelberg, has lost importance with the rise of Mannheim, and like the two cities named, owes its decline, in the first instance, to the ravages of the French troops under the orders of the Roi Soleil. Its cathedral alone, with the rows



SPEYER (SPIRES).



THE RHEINGAU

of imperial tombs, remains to speak of the time when it was the rival not only of Worms but of Mainz.

Considerably more than half a million people live to-day in the group of cities extending from Hanau through Frankfurt and Höchst to Mainz and Wiesbaden. But west of Weisbaden, between the Taunus and the Rhine, there is a slip of low-lying country gradually narrowing to a point opposite Bingen, which from Roman times has preserved its character as the richest vineyard land on the Rhine. This is the Rheingau in the later and narrower sense. It was formerly the private possession of the archbishops of Mainz, and was then enclosed by a dense belt of trees some fifty yards in width. Almost every village within it gives its name to a wine of repute—Geissenheim, Rüdersheim, and Hattenheim, not to mention Johannesberg, Steinberg, and Grafenberg. At the end of the Rheingau, high over Rüdersheim on the Niederwald, where the Taunus rises direct from the Rhine, has been erected the National Memorial of the events of 1870, facing up the Nahe valley towards the border fortress of Metz.

Chapter Eight

THE MOSELLE AND THE UPPER MEUSE

WEST of the Upper German Rhine there is a region watered by those tributaries of the Rhine which in some degree balance the Neckar and Main to east of the river. But there are several respects in which the basins of the Upper Moselle and Upper Meuse differ markedly from those of the sister tributaries in Swabia and Franconia. In the first place they are more sharply divided from the Rift Valley of the main river. The Vosges, from the Belchen to the Donon, form a more continuous ridge than the Black Forest opposite. Further north, between the Vosges and the Hardt Mountains, there is no merely hilly section of the boundary of the Rhine Valley at all comparable for ease of passage with the district of the Kraichgau behind Karlsruhe and Bruchsal, on the opposite side of the rift.



ELIZABETHAN SPRING



IN THE PARK

HOMBURG



THE MOSELLE AND UPPER MEUSE

Finally, in the neighbourhood of the Rheingau, the small basin of the Nahe, with its rugged surface and deeply incised valleys, is far other than the broad entry of the Main plain between the Taunus and the Odenwald, in the centre of which stands the city of Frankfurt. Moreover, the Moselle and the Meuse, instead of joining the Rhine within the Rift Valley, as do the Main and the Neckar, pierce their own gorges through the northern Schist Plateau.

Lorraine, a term which may be broadly applied to the whole of the upper basins of the Moselle and Meuse, is divided more definitely by these several features from the Rhine Valley than it is from the French land of Champagne by the Argonne and from the Free County of Burgundy by the Mons Faucilles. Relatively to the French territories west and south of it Lorraine is a plateau, but the difference of levels is by no means so marked as where the plateau of Bavaria rises along the brink of the German Jura above the deep-lying basins of the Swabian Neckar and the Franconian Main. Lorraine has, therefore, at all times tended to be a "buffer" land between Germany and France, being separated from Germany by the Vosges, the Hardt, and the Schistose highland of the Hunsrück, but separated also from France by the fact

THE RHINE

that the drainage of the navigable rivers is Rhine-ward and not Seine-ward.

The Moselle and the Meuse play essentially different parts in the natural economy of Lorraine. With the exception of the Chiers and the Semoy, received on the right bank as it enters the gorge in the Schist Plateau, the Meuse is practically devoid of tributaries. For a hundred and twenty miles it flows almost directly northward through a valley trenched into the border of the higher ground, so that there is left to the west towards the lowland of French Champagne only a comparatively narrow rim of hill, which is known in part, where it forms an emphatic ridge, as the Argonne. Although not accurately, yet roughly, the Meuse Valley made the boundary between France and Germany during the centuries which elapsed between the break-up of the Empire of Charlemagne and the French eastward conquests in the sixteenth and seventeenth centuries.

The Moselle on the other hand is the central artery of Lorraine. It receives tributaries, the Meurthe, the Saar, the Orner, and the Sauer, both from the right hand and the left, and the chief cities of the land, Nancy, Metz, and Trier, stand upon its banks or those of the Muerthe. This circumstance is emphasized

THE MOSELLE AND UPPER MEUSE

moreover by the fact that where the Moselle enters the gorge through the Schist Plateau, between the Ardennes and the Eifel on the left hand and the Hunsrück on the right, the somewhat lower, more fertile rocks of Lorraine invade the higher and sterile Schist, so that round Trier there is a fertile depression from the south which is known to the German geographers as the *Bucht von Trier*, the lowland gulf, that is to say, invading at Trier the outline of the Highlands.

In the time of the Romans the basin of the Upper Moselle was the strategic key to the Rhine frontier of Gaul. The road from the Mediterranean which came up the Rhone Valley to Lyons, and thence northward through the Saone valley to Chalons, struck over the plateau of Langres to the valley of the Meuse, and then to the Moselle Valley at Toul. From this point it passed through Metz to Trier, which site offered to the southern conquerors a broad fertile bottom, surrounded by sheltering heights, at the entry to the gorge through the barren wind-swept uplands. In the midst of the Moselle vineyards at this point was the parting of the ways which by water extended to the confluence of the rivers at Coblenz, and by land on either hand, through favouring de-

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pressions in the plateau, to Cologne in the north and to Bingen and Mainz in the east.

The political divisions of the west Rhineland have in all periods of history centred round the positions of Mainz, Cologne, and Trier. In Roman times the province of Upper Germany, of which Mainz was the capital, included Alsace to the Vosges, and northward beyond the Lauter not merely the territories of Speyer and Worms, but also the whole basin of the Nahe, and a tongue of land on either bank of the Rhine to below Coblenz. The Province of Lower Germany, on the other hand, with Cologne for its capital, spread from near Coblenz northward and westward so as to include all the basin of the Lower Meuse until beyond Namur. Between the two Germanies there intruded down the Moselle almost to Coblenz the territory of Upper Belgica, whose chief town was Trier. In the other direction Upper Belgica extended southward to the sources of the Moselle and Meuse. The names of the cities of Metz and Trier refer to the Gallic tribes of the Mediomatrici and the Treveri established along the Moselle before the arrival of the Romans.

The ecclesiastical divisions, which in some sense continued the Roman civil provinces into the Middle

THE MOSELLE AND UPPER MEUSE

Ages, had like boundaries. The archiepiscopal province of Mainz extended to the Vosges behind Strasburg, and included the Nahe basin behind Mainz itself, while the province of Trier contained not merely the three famous episcopal sees of Toul, Metz, and Verdun, on the Upper Moselle and Upper Meuse, but also extended below the city of Trier, with a narrow belt of territory on either bank of the Moselle to Coblenz on the Rhine, and beyond the Rhine up the Lahn as far as Wetzlar and Giessen. Thus a tongue of the province of Trier was wedged between Cologne and Mainz, just as a tongue of Upper Belgica lay between the Upper and Lower Germanies.

In the subdivision of the Carling Empire the whole of the Moselle and Meuse basins, as well Lower as Upper, were included in Lotharingia, but neither Alsatia beyond the Vosges nor yet the Nahe basin, which belonged respectively to Allemania and Francia. When at a later time Lotharingia was divided into Upper and Lower Duchies, the Upper Lotharingia, which included Metz, Toul, Verdun, and Trier, extended down the Moselle completely to Coblenz, and thus differed a little from the Roman Province of Upper Belgica, but also from the ecclesiastical elec-

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torate of Trier, for the one just failed to include Coblenz and the other extended beyond it up the Lahn. The Duchy of Upper Lotharingia was subdivided into minor fiefs in the later Middle Ages. The valley of the Moselle from Trier to Coblenz became the temporality of the archbishopric of Trier, and the greater part of the remainder became the Duchy of Lorraine, with its capital at Nancy, except that at Metz, Toul, and Verdun the cities themselves were recognized as free imperial towns, while considerable districts in the neighbourhood became subject to the three bishops. Still later, as happened so frequently elsewhere in the Rhine basin, the bishops established their control even over the cities.

The French invasions began with the transfer of these three bishoprics to the French crown late in the sixteenth century. In the seventeenth century Alsace became French with the free city of Strasburg, but the Duchy of Lorraine remained an enclave within the French boundaries until the eighteenth century. The archbishop of Trier moved his capital from Trier to Coblenz shortly before the French Revolution, but his territory was secularized by the French and when in 1814 and 1815 the map of Europe was reconstructed at Vienna, the Lower Moselle valley

THE MOSELLE AND UPPER MEUSE

was annexed to Prussia, and for the first time in history united with Cologne to form the province of the Rhine. The basin of the Nahe, however, and the adjacent territories of Worms and Speyer retained their old political connection with the Franconian and Swabian lands beyond the Rhine, Mainz being annexed to Hesse Darmstadt and the portion of the Palatinate around Speyer and Kaiserslautern becoming a detached fragment of the Kingdom of Bavaria.

It is perhaps a little curious that the Romans do not seem to have utilized the depression of the Nahe basin for communication between Metz on the Upper Moselle and the great strategical position of Mainz in the salient angle of the Rhine. Metz was for Rome merely at the crossing of the south and north road from Lyons to Trier with the east and west road from Strasburg through the Gap of Zabern into the Seine basin. During the last hundred and fifty years, however, the correlated strategical significance of Mainz and Metz has been repeatedly evident. When the French frontier extended along a broad front on the Rhine, Napoleon constructed the Kaiserstrasse directly between the two places. Now that Metz has in turn become the frontier fortress of Germany,

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Mainz and Strasburg are fortified bases from which convergent roads traverse the Nahe basin and the Gap of Zabern to Metz on the Moselle at the apex of the triangle. The whole course of history, however, shows that until we reach the time of modern macadamized roads and railways the Nahe basin belonged naturally, like Alsace, to the sovereignties beyond the Rhine, and that the natural outlet of Lorraine, in so far as it was towards Germany, was either down the Moselle valley or by Zabern to Strasburg. In former times, it must be remembered, the chief play of warfare was not between Paris and Berlin but between Paris and Vienna. Strasburg and Belfort, rather than Mainz and Strasburg, were the significant positions in the Rhine basin where it intrudes between the basins of the Seine and the Danube.

A new and special significance was given to the roads through the Nahe basin by the events of 1815. By the Treaty with France, as originally drafted, the lower valley of the Saar as it flows past Saarbruck was to have remained French, but as a penalty for the Campaign of the One Hundred Days, Saarbruck was annexed to Prussia, with the result that the two south-westward ways through the Moselle and the



OLD BRIDGE AT KREUZNACH.

THE MOSELLE AND UPPER MEUSE

Nahe valleys could be connected transversely beyond the end of the Hunsrück by the valley way of the Saar within German territory. It so happens, moreover, that precisely in the district thus ceded there lie the coal deposits which have been developed in the past century, so that a great mining and industrial population became established on the very frontiers of the Prussian kingdom, although within the physical border of Lorraine. The strategical motives which decided German policy in favour of the annexation of Metz after the War of 1870 were undoubtedly reinforced by commercial motives based ultimately on these historical accidents. The Saar has been canalized past Saargemünd to Saarburg, where the great Marne and Rhine Canal is crossed on its way to the Gap of Zabern and Strasburg. The coal of Saarbruck is exported in the main by water not down the Moselle, but upward by the Saar and the canal to Strasburg, and then by the Rhone and Rhine Canal to the factories of Colmar and Mülhausen; also by rail to Switzerland and South Germany. The whole of this system of waterways is now German.

The language frontier runs through the midst of that part of Lorraine which was transferred to Ger-

THE RHINE

many, but Metz itself lay within the French-speaking country. To-day, however, owing to the German garrison and to the German administrative establishments, Metz is in the main a German city ringed round with French-speaking villages. There are great iron deposits both in German Lorraine and in the Grand Duchy of Luxemburg to the north.

The approaches to Saarbruck from the Rhine converge from Bingen, Mainz, Worms, and Speyer, but in these latter days Ludwigshafen, opposite to Mannheim, has displaced the significance of Speyer and Worms as Rhine ports. The Hardt Mountains end a little to the south of Worms, and an extension of them known as the Westrich supplies an edge looking inward over the Nahe basin to the opposite heights of the Hunsrück and the Soonwald. This edge, known as the Sickinger Höhe, has a depression, the Landstuhlerbruch, along its north-western foot, which depression is bottomed with a moor. The Landstuhlerbruch is not the valley of a stream, though several streams make use of it for short portions of their course, but is yet one of the most marked and continuous features in the country. Through it was carried Napoleon's Kaiserstrasse from Kaiserslautern towards Saarbruck. At Kaiserslautern ways

THE MOSELLE AND UPPER MEUSE

unite from Bingen, Mainz, Worms, and Ludwigshafen-Speyer, which make use of various valleys penetrating the hill country from the Rhenish lowland. Kaiserslautern is in consequence a town of more than fifty thousand inhabitants, the chief centre of that part of the Bavarian Palatinate which lies in the hills beyond the Rift Valley.

The space between the Sickinger Höhe on the one hand, and the Soonwald and the Idarwald, edges of the Schist Upland, on the other, is occupied by a hilly district whose valleys collect to form the Nahe. The last outliers of the coal-field of Saarbruck extend north-eastward into the Nahe basin, and the intrusion of some volcanic rocks, just where the tributaries gather to the main Nahe valley above Creuznach, give variety to the gorge and hill scenery. Creuznach, a considerable watering place with hot springs, stands on the Nahe about ten miles above Bingen, and in the neighbourhood are a whole group of ruined castles, strongholds of petty princes in the Middle Ages, for the most part destroyed by the French in the year 1689. Immediately above Creuznach itself there is a hilltop, the Kauzenberg, crowned by the castle of the former Counts of Spannheim. Three or four miles higher up, by Munster-am-

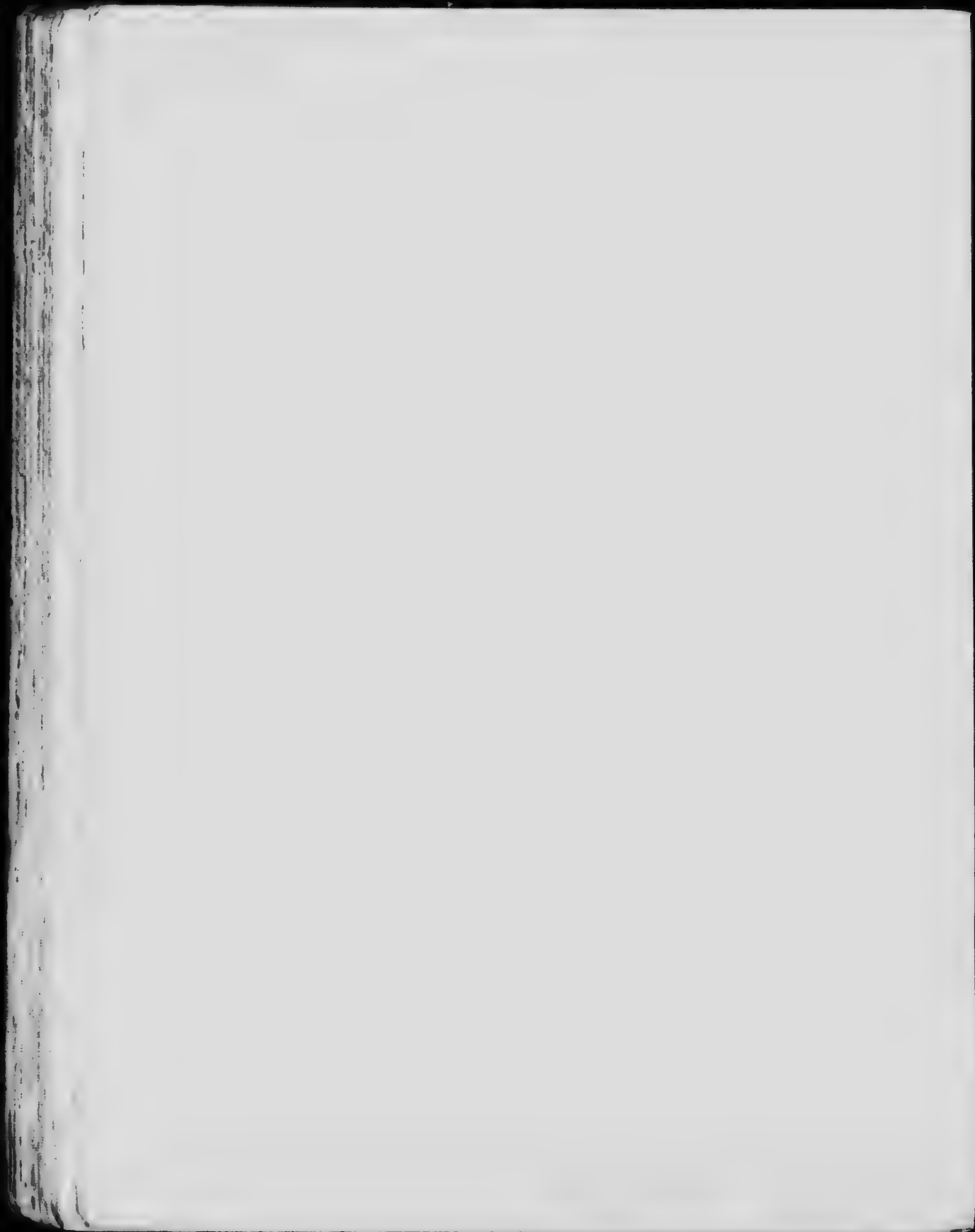
THE RHINE

Stein, is the Rheingrafenstein, a cliff rising more than 400 feet from the Nahe, with the castle of the Rheingrafen or Rhenish Counts on the top of it. Within a mile again, on the other side of Munster-am-Stein, is the Ebernberg where Franz von Sickingen, the great opponent of the Archbishop of Trier, gave refuge to the Reformer, Ulrich von Hutten, in 1520. A few miles yet higher is the striking Schloss Dhaun, a second seat of the Rheingrafen, placed where a gorge through the Soonwald brings the Simmer tributary from the Hunsrück down to the Nahe. It is characteristic of this broken and difficult country that in the Middle Ages it should have held the seats of these petty princes set in the midst of the greater powers of Trier, Mainz, and the Palatinate. Their little territories passed for the most part to the Palatinate, and were ultimately divided between Prussia and Bavaria when the Nahe valley was made a boundary in 1814.

At Oberstein on the Upper Nahe, the river passes between lofty cliffs crowned with the ruined castles of the barons of Oberstein. In this portion of its course the Nahe is for the most part the boundary of the little principality of Birkenfeld, which now belongs to the distant Duchy of Oldenburg. At the very source of



THE MOSELLE AT TRIER (TREVES)



THE MOSELLE AND UPPER MEUSE

the river there rises to a height of nearly 2,000 feet a remarkable volcanic hill, the Schaumberg, which commands views over the Nahe country in one direction and over the Saar country in the other, for it stands on the waterparting. The railway from Bingen and Creuznach by way of the Nahe valley rejoins the line from Creuznach by way of Kaiserslautern and the Landstuhlenbruck, at Neunkirchen, which is the first considerable place on the coal-field. No single great town forms the centre of this industrial area, but several neighbouring towns, each of some 30,000 inhabitants, St. Johann, Burbach-Malstadt, and Saarbruck, together make a considerable nucleus of population.

It was behind Saarbruck that the right of the German army assembled in 1870, the left being in the Rhine Valley, between Landau and Weissenburg. South of Saarbruck, as a consequence, beyond the River Saar and on the heights of Spicheren, the initial battle of the campaign of the right wing took place, corresponding to the battles of Weissenburg and Wörth of the left wing. The army of the Saar advanced on Metz and fought the battle of Courcelles immediately to the east of the fortress, while the army of the Rhine came up from Zabern and Pfalz-

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burg and crossed the Moselle at Pont-à-Mousson to south of Metz, from which point it wheeled northward to fight at Mars-la-Tour, and then wheeled eastward to the terrible battle of Gravelotte, when the French were driven back from the Paris road into Metz. Thus the whole of the decisive operations with which the great war opened turned on the strategical opportunities offered by the ways which converge through the hilly country within the Rhine bend to the Moselle of Lorraine.

Metz is placed in the angle of the Moselle and its confluent tributary the Seille, in a position which, before the days of modern artillery, was of great defensive strength, for the rivers approach one another closely above the city, so that it occupies almost an insular site. In these days it could be dominated from the surrounding hills, but a distant ring of forts have now replaced the old ramparts, and the circuit of the present stronghold is nearly forty miles, while the space commanded by the guns is, of course, still greater. In the centre of the old city, marking its long importance, rises a splendid Gothic cathedral, the rival of Strasburg in the east and of Rheims in the west.

The Moselle flows northward from Metz between

THE MOSELLE AND UPPER MEUSE

wooded hills, past Diedenhofen or Thionville, to the point where the Sauer left tributary and the Saar right tributary enter within three miles of one another. Between the two confluences, high on the northern valley edge, there stands at Igel the Heidenturm or Tower of the Heathen, built by the Romans. Seven miles from Igel, below the confluence of the Saar, is the northern Roman capital of Augusta Trevirorum, Treves or Trier. Just below Trier, again, the Kyll Valley comes in from the north with the Roman road from Cologne, so that the site chosen by the Romans is where five valleys are confluent, the Lower Moselle, the Kyll, the Saar, the Sauer, and the Upper Moselle.

The plan of Trier is square and indicative of its origin from a camp, although in later times it rose to the rank of a colony and became the seat of an imperial palace. All around for some distance, both up and down the Moselle valley, are remains which mark the residential character of the neighbourhood in Roman times. Built of red sandstone, with the medieval walls preserved and numerous towers, the city still presents a striking appearance in the midst of its green plain and wooded hills. Trier became a bishopric in the fourth century and remained before

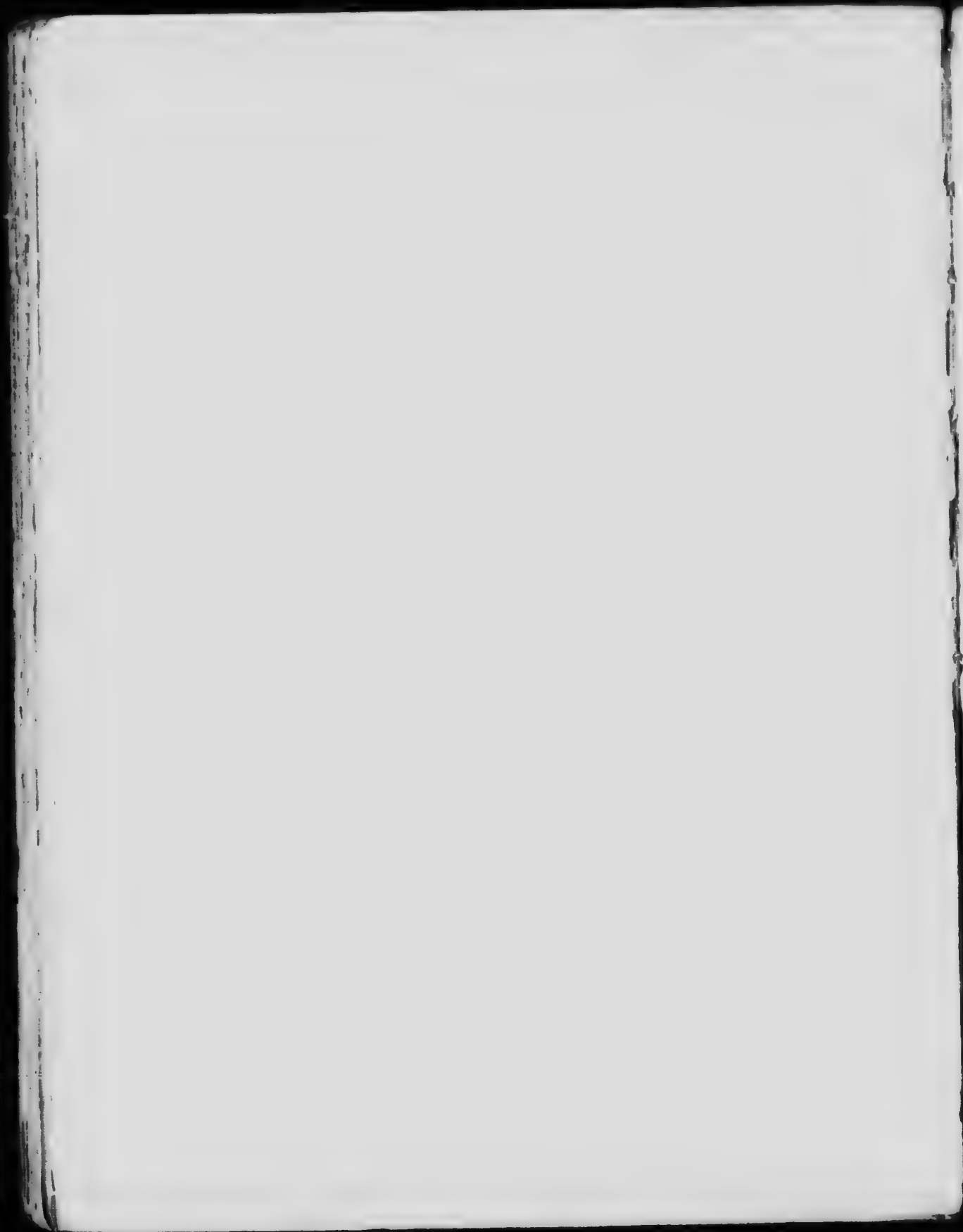
THE RHINE

all things an ecclesiastical centre until the time when the last Elector moved his residence to Coblenz only three years before the French Revolution. Trier has had little commercial or industrial significance, and to this fact and to its capital rank it no doubt owes the preservation of its many ancient monuments. The most striking of these is the Porta Nigra, the North Gate of the Roman city, built of sandstone and held together by iron bonds in the place of cement. Other Roman remains are the Basilica, now a Protestant church, originally no doubt a court of justice; the Imperial palace; the amphitheatre, capable of holding more than seven thousand spectators; the baths, and some portions at any rate of the bridge over the Moselle. Medieval remains are the Rotheshaus, once the town hall; the Cathedral, with its beautiful cloisters; and the Liebfrauen Church. Whether we consider its past historic significance, Roman and Christian, or its present remains, or its beautiful neighbourhood, Trier is of all towns in Northern Europe one of the best worth visiting.

The Sauer tributary on the one hand and the Moselle on the other form the boundary between the Grand Duchy of Luxemburg and the Prussian Rhine Province, and the whole of the Grand Duchy with



TRIER - THE PORTA NIGRA.



THE MOSELLE AND UPPER MEUSE

the exception of the immediate valley of the Moselle is contained within the Sauer basin. Luxemburg itself stands on a height above the Alsette river. Its ramparts were destroyed by arrangement between Prussia and France when in 1868 the two Powers so nearly found in this territory the pretext for the inevitable struggle which shortly afterwards took place with reference to the succession to the Spanish throne. The medieval Duchy of Luxemburg stretched across all the western heights of the Schist Upland from the Moselle to the Lower Meuse, thus occupying the interval between the Duchy of Lorraine representing the Upper Lotharingia, and the Duchy of Brabant, the most direct representative of the Lower Lotharingia. But when in 1830 Belgium was separated from the Kingdom of the Netherlands, Luxemburg was divided into two portions, roughly corresponding to the northward or Meuse-ward, and southward or Moselle-ward drainages from the upland, and while the northern portion became a province of the kingdom of Belgium, the southern portion remained under the rule of the King of the Netherlands. At the accession of the present Queen of the Netherlands the Grand Duchy was separated by virtue of the Salic law, and Luxemburg is one of the few remain-

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ing little sovereignties into which most of the Rhineland was divided before the time of the French Revolution. But the railways, the post office and the customs are administered by Germany.

Below Trier the Moselle enters its gorge, which in one respect presents a striking contrast with that of the Rhine. From Bingen to Bonn the course of the Rhine exhibits only two or three considerable bends such as to affect the course, not only of the river, but also of the valley. The Moselle on the other hand between Trier and Coblenz exhibits a series of the most remarkable convolutions, almost every one of which is followed, not merely by the river, but also by the gorge in the bottom of which it runs. In other words, the valley of the Moselle here perpetuates the course of the river when it flowed high above its present level on the surface of the plateau. As a consequence of this intricacy and of the resulting great prolongation of the waterway, the navigation of the Moselle between Trier and Coblenz is insignificant as compared with that of the Rhine or even that of the Moselle and Saar above Trier. The scenery, however, is if anything more picturesque than that of the Rhine itself and fuller of surprises.



THE RED HOUSE, TRIER (TRÈVES).

THE MOSELLE AND UPPER MEUSE

Starting from Trier we reach in twenty-two miles by water, but as the crow flies in two-thirds of that distance, Neumagen, where was an Imperial Roman palace, whose foundations have recently been excavated and many antiquities removed to the Museum at Trier. Then we come to a series of small towns which have given their names to wines of world-wide celebrity—Piesport, Brauneberg, Berncastel, Graach, and Zeltingen. The most striking and the most convoluted part of the valley is entered at Berncastel; from that town to Cochem is a direct distance of sixteen miles, but the steamer on the river must follow a course of more than fifty. Ruined castles crown many of the heights; usually they were connected with the history of Trier. For instance, at Starkenburg, a Countess of the fourteenth century is said to have imprisoned the then Archbishop of Trier for having infringed her rights, and with the ransom which he paid she is said to have built the neighbouring castle of Grafenburg. The inhabitants of the small towns of Traben and Trarbach below the Grafenburg are still for the most part Protestant, a fact due no doubt to hostility towards the Archbishops within the little territory of Starkenburg, which here formed an enclave in the Electorate of Trier. Further down the

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Moselle at Winningen there is a similar Protestant enclave, which once belonged to the County of Spooenheim, but in the main the people of the Moselle Valley are Roman Catholic, having been held successfully to the ancient faith by their former ecclesiastical rulers.

Chapter Nine

THE RHINE GORGE

THE Rhine Schist Plateau is incised by a cross of great gorges. From the south-east to north-west for some fifty miles from Bingen to Königswinter is the gorge of the Rhine itself. Intersecting this in the neighbourhood of Coblenz is a more devious gorge cut into the plateau at right-angles to that of the Rhine; this gorge is drained from the south-west by the Moselle and from the north-east by the Lahn. It is true that the mouth of the Lahn lies some three miles south of that of the Moselle, but many of the curves of the Moselle gorge have a greater radius than three miles, and the general unity of the Moselle-Lahn valley is therefore not broken by the lack of precise coincidence in the confluence of the two tributaries with the main river. Coblenz, the one city of considerable size in all the Schist Plateau, is placed in the angle of the Moselle-Rhine confluence, and is the crossing-place, not only

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of the Rhine with the Moselle-Lahn navigation, but also of the twin railways by the right bank and the left of the Rhine with the south-westward railway from Berlin and Kassel by the Lahn valley and the Moselle valley to Metz on the French frontier.

There is, therefore, a remarkable symmetry in the geography of this part of the Rhine basin, a symmetry which extends even further, for of the four great slabs into which the plateau is cut by the gorges, the two which lie towards the south-eastern edge on either side of the Rhine are similar in general character, and present contrasts with the other two which lie right and left of the Rhine towards the northern lowland. The Taunus and the Hunsrück more nearly resemble mountain ranges, while the Westerwald and the Eifel have a more definitely plateau character.

The Taunus overlooks the Rheingau for nearly forty miles with a fairly steep, thickly forested south-eastward brink, but from the summit line the northward descent towards the Lahn valley is more gradual, and divided for the most part among cultivated fields. The Hunsrück, although its chief summit is hardly lower than that of the Taunus, presents no such decided south-eastward brink, because the

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mountains of the Rhine Palatinate approach it much more nearly than do those of the Odenwald to the Taunus. The valley of the Nahe, deeply cut but narrow, separates the Palatinate mountains from the Hunsrück, but the broad plain about Frankfurt-on-the-Main holds wide apart the Taunus and the Odenwald. None the less the north-westward slope of the Hunsrück is similar to that of the Taunus, and in the case of both the drainage is carried not to the Rhine but by many tributaries to the Lahn and to the Moselle. Therefore the Rhine Gorge from Bingen as far as Coblenz is singularly continuous, for it receives from the right hand and the left only insignificant tributaries.

The entry to the gorge at Bingen is to the traveller down stream the most impressive scene on the whole river, for afterwards he may become somewhat weary of the two opposed fronts of steep, vine-clad, level-topped, dark-soiled slopes. He arrives at Bingen, however, after voyaging on a river with low banks, often a thousand yards across, and divided as often as not by long, low, wooded islands, behind which the tow-boats with their strings of barges often disappear, having taken the alternative channel. At Bingen the mountains, visible beforehand in the distance to

THE RHINE

the north, draw close to the water's edge, and a great gash in their front receives the river, which at the same time narrows to a mere fraction of its former breadth. The water runs with stronger stream until in the Binger Loch it swirls forward and slightly downward over what was formerly a rapid, in earlier times a great impediment even to boat navigation. The obstructive rocks have now been completely removed, although the narrowness of the channel and the swiftness of the stream still compel a careful navigation. Once within the gorge the Rhine runs more easily, smoothly, and over great depths, with a dark bronze-green surface.

The little river Nahe joins immediately opposite to the point where the main river curves northward into the gorge, and in the angle between the Nahe and the Rhine is the ancient town of Bingen. Beside Bingen rises the Rochusberg, a forepost of the hard rocks of the upland edge on the opposite side of the river, so that Bingen belongs strictly to the Schist-land. Although it has no large population, it has always possessed a certain importance. The seven-arched bridge which crosses the Nahe is built on the foundations of a Roman bridge; the castle of Klopp, on the slopes of the Rochusberg above the town,



BINGEN, FROM THE GERMANIA DENKMAI.

THE RHINE GORGE

stands on the site of a Roman fortress. The recently restored parish church has a crypt of the tenth century. On the opposite Rhine bank is the ruined castle of Rheinfels, which belonged to the Archiepiscopal Electors of Mainz, the medieval sovereigns of this part of the Rhineland, and on a rocky island precisely in the gorge mouth is a smaller ruin, the Mouse Tower, to which there attaches the legend of the bad Elector Hatto, who in a time of famine bought up all the corn and, when his good people of Mainz importuned him for bread, burnt them in a barn, and was forthwith chased from Mainz by the rats, who followed him to Bingen, and from Bingen even to his final refuge in the tower on the island, and there ate him. Modern analysis, however, attributes to the name of Mouse Tower the derivation merely of "Musturm," the old German word for arsenal.

Bingen was a free city of the Empire, and a member of the Rhenish League of which Mainz was the centre during the two centuries when it managed to keep its Archbishop in order. Afterwards Bingen shared the fate of Mainz and fell under archiepiscopal despotism, until at the reconstruction of Germany at Vienna in 1814 both towns passed to Hesse-Darm-

THE RHINE

stadt, the boundary between Prussia and Hesse being placed midway over the bridge of the Nahe at Bingen. High on the opposite Niederwald, at the end of the Taunus, is the National German Memorial of the events of 1870-71, the crisis of German history being fitly commemorated at the critical point in the course of the greatest German river.

From Bingen to Coblenz for forty miles the gorge of the Rhine is continuous, and the castles and little towns, both full of history, succeed one another now on this side and now on that. The first of the castles is on the left hand, the Rheinstein, once the residence of the Archbishop of Trier, and rival therefore to the Ehrenfels opposite, of the see of Mainz. Beyond and still on the heights of the same bank are two ruins, the Falkenburg and the Sooneck, once robber strongholds for the harrying of the medieval traffic on the river, and both destroyed by Rudolph of Hapsburg. Then on the right bank there follows the little town of Lorch, at the mouth of the Wisper valley, down which the east wind blows keenly at times from the plateau about Schwalbach in the rear of the Taunus. A cliff edge known as the Devil's Ladder leads up from Lorch to the castle of Nollach, associated with one of the many legends which gather about the

THE RHINE GORGE

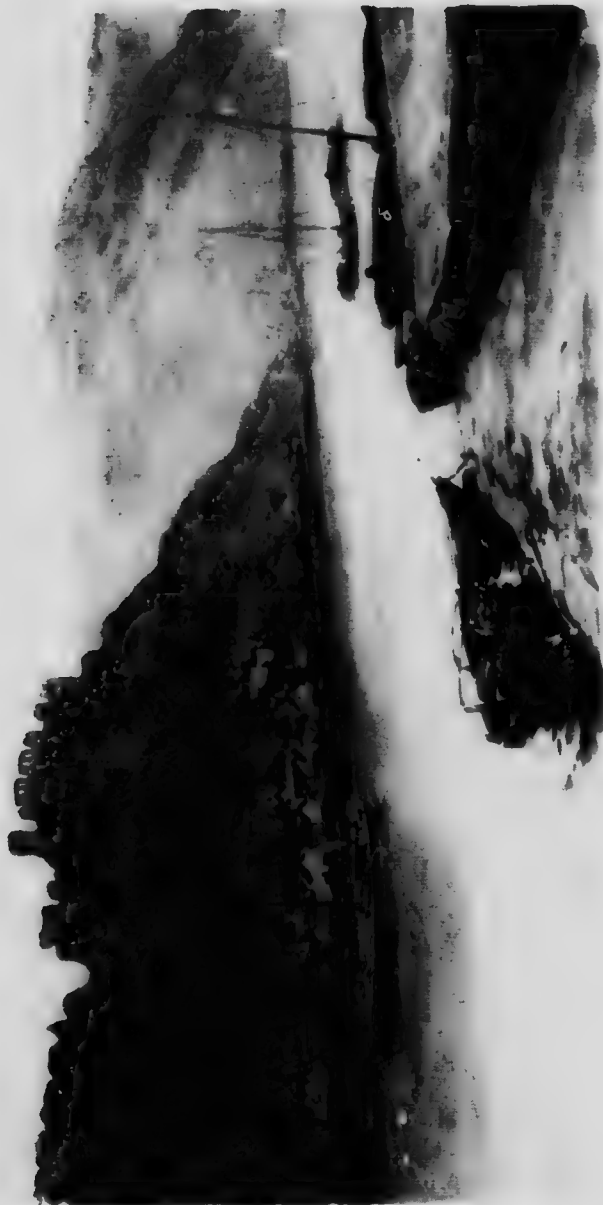
Rhine gorge. The gist of it is that a knight of Lorch with supernatural assistance once scaled the Devil's Ladder on horseback and gained the hand of his lady.

We now enter the former territory of the Counts Palatine, containing on the left bank the town of Bacharach and on the right that of Caub. Three castles, the Fürstenberg, the Stahleck, and the Stahlberg stand in ruins on the heights of Bacharach, and the castle of Gutenfels on the opposite bank above Caub, while the Pfalz is placed on a rocky island in the centre of the Rhine. Bacharach possesses two celebrated churches, the one a round temple-church of Romanesque architecture, the other the beautiful church of St. Werner in the Gothic style. Bacharach and Caub are each surrounded by medieval ramparts; the one has about two and the other about three thousand inhabitants. Their associations are not, however, merely with the Palatinate and with older times, for in 1814 the Prussians and the Russians under Blücher here effected the passage of the Rhine, driving the French before them. Then we come to Oberwesel on the left bank, another ancient town of about 3,000 inhabitants, once a free town of the Empire, and above it the ruin of the Schönburg, the

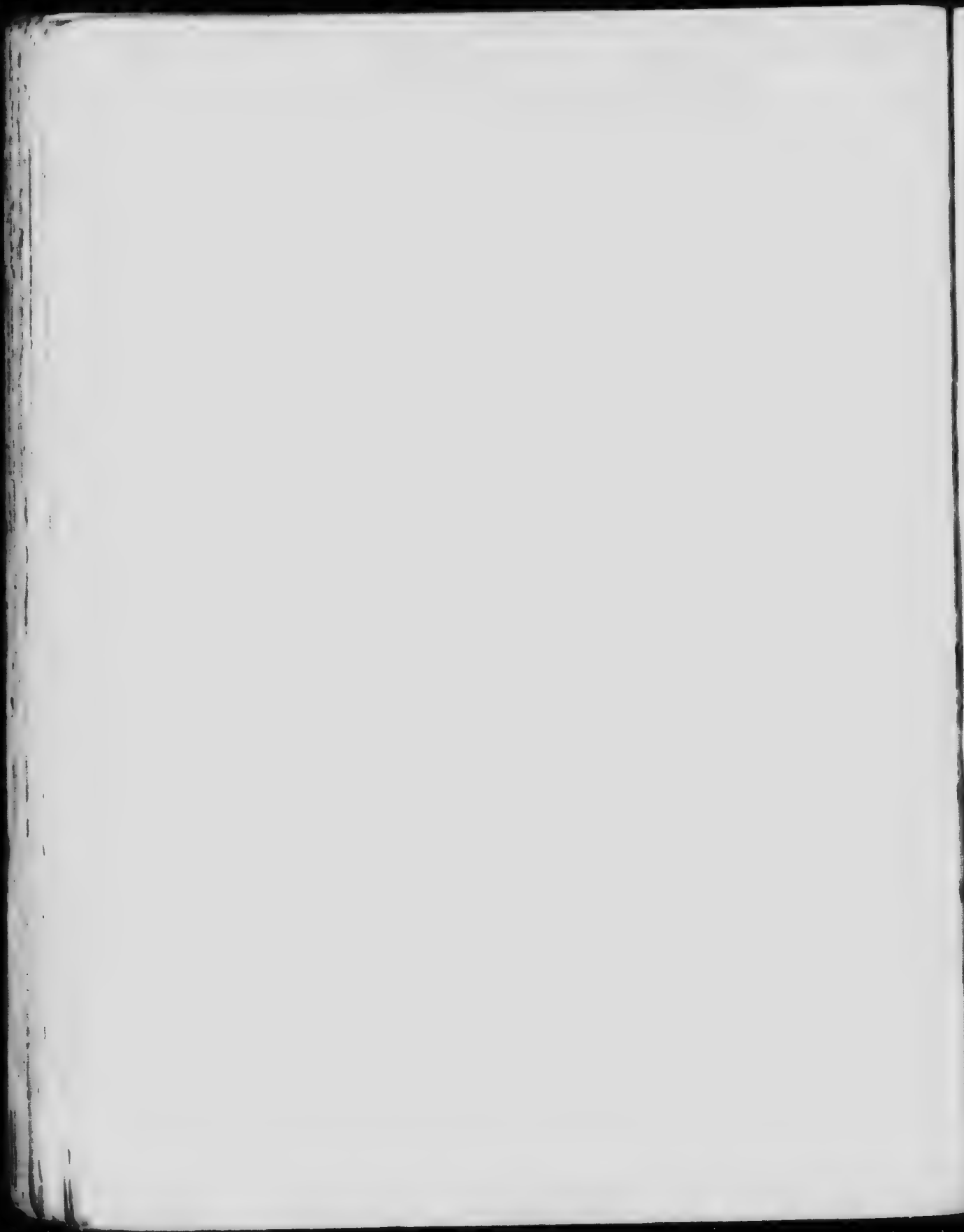
THE RHINE

birthplace of that Marshal Schomberg who, after serving as a soldier successively in the French and the Prussian armies, met his death in the service of William III. at the Battle of the Boyne. This castle, like those of the Palatinate just mentioned, was destroyed by the French in the terrible year 1689.

Descending the stream some three miles further we enter the former territory of the Counts of Katzenelnbogen. At the beginning of their section of the river, on the right bank, rising between 400 and 500 feet above the water, is the great cliff of the Lorelei, whence a destructive fairy is said to have lured boatmen on to the rapids below. Round the Lorelei there opens the most imposing reach of this part of the river. To the left is St. Goar, to the right St. Goarshausen, picturesque little towns each with some 2,000 inhabitants. Above St. Goar are the fine ruins of the Rheinfels, the residence of the Counts of Katzenelnbogen and of their Hessian successors until the time of the French Revolution. On the other side above St. Goarshausen, thus securing with the Rheinfels the toll here formerly imposed on the passing shipping, is the castle of New Katzenelnbogen or the Cat, and a short distance inland another castle, the Reichenberg, belonging to the same family. Kat-



RHEINFELS AND ST. GOAR



THE RHINE GORGE

zenelnbogen itself, the ancestral home of the Counts, stands about twenty miles eastward between the Lahn valley and the Taunus.

Leaving St. Goar we re-enter the former territory of the Elector of Trier and see on the right hand the ruins of the Mouse, a castle so-called by the Counts of Katzenelnbogen in contrast with their Cat of St. Goarshausen, and then we arrive below the two castles of Sterrenberg and Liebenstein, placed side by side on a rocky edge, both of them the possessions of Trier. On the other side of the river a little further on is the small town of Boppard, which, like Oberwesel, grew to a certain wealth by means of the Rhine traffic, and was recognized as a free imperial town, but in the fourteenth century, together with Oberwesel, was handed over by the Emperor to the Elector of Trier. The gorge here makes a great double bend, and at Braubach once more touches the former Katzenelnbogen territory, where the castle of the Marksburg, 500 feet above the river, stands still unruined, having escaped the French in 1689. It served as a prison until the County of Nassau, to which all the right bank of the river was assigned in 1814, fell to Prussia in 1866.

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Then on the left bank is seen the Königsstuhl, the frequent meeting-place of the four Rhenish Electors, whose territories at different points reached this part of the Rhine Gorge. Rhens, a little above the Königsstuhl and on the same side of the river, belonged to Cologne; Capellen, a little below the Königsstuhl, belonged to Trier; Lahnstein, on the opposite side, was the property of the Archbishop of Mainz; and Caub and Bacharach, as we have seen, were within the Palatine territories. Finally, as we approach Coblenz, the castle of Stolzenfels is seen high on the left hilltop, once a fortress of Trier, destroyed by the French in 1689, but rebuilt, and now the Rhenish home of the German Emperor. Opposite and below is the mouth of the river Lahn with its little delta, and then we pass under the railway bridge which carries the line from Berlin to Metz along the Lahn and Moselle valleys, the first bridge across the river since Mainz. Beyond this Ehrenbreitstein opens to the right and the city of Coblenz to the left.

The detail into which we have entered is necessary in order to give an impression both of the quick succession of the objects of interest in the actual journey, and for the appreciation of the historic complexity of

THE RHINE GORGE

this part of Germany. No important tributary enters the gorge, and there is, therefore, no focus of roads to call for a considerable town, or even the space beneath the cliffs for its foundation. There are, therefore, many little walled places, and as we have seen, two of them formerly of imperial rank; but the peaceful development of the traffic in the hands of these diminutive municipalities was counteracted by the strongholds, erected to exact toll of the passing wealth, by every petty prince—Mainz, Palatine, Katzenelnbogen, Cologne, and Trier—who could extend his territory to however short a frontage on either brink of the valley. It will be noted that both the Palatinate at Bacharach and Caub, and Katzenelnbogen at St. Goar and St. Goarshausen, seized upon facing shores, and thus established the right to a complete bar across the river. It was only after the Napoleonic time in 1814 that the gorge itself became a boundary from Mainz through to Coblenz, and that all the right bank was conveyed to Nassau, while the left bank became Hessian as far as Bingen, and Prussian from that point downward.

Coblenz, as its name implies, is of Roman origin. The position in the angle between the Moselle and the Rhine, beside the old bridge over the tributary,

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is comparable to that of Bingen beside the Lahn bridge. Modern Coblenz has a fixed bridge, it is true, over the Rhine itself, in addition to the railway bridge just mentioned, but until lately the passage of the Rhine was only by the bridge of boats, which is still maintained. The most attractive portion of the city is now along the Rhine front to the Deutsche Eck in the very angle between the rivers, where stands the striking monument to the Emperor William I.; but the curious traveller will find the kernel of the place in a group of little, more or less concentric streets at the southern end of the Moselle bridge, half a mile away from the Rhine bank. This was the original town, Roman and Frankish. Coblenz became a member of the Rhenish Federation, and was a centre of struggle in the Thirty Years' War, but in the third characteristic epoch of Rhenish history it managed to resist the French siege of 1688, and compelled the French to retreat. Just before the French Revolution, Coblenz became the capital and residence of the Electors of Trier and hence a centre of interest during the wars which followed, for it was here, a short way from the French frontier, that the Emigrés of the Ancien Régime established themselves and based their futile actions.



CONFLUENCE OF RHINE AND MOSELLE

THE RHINE GORGE

The fortress of Ehrenbreitstein, high on a rock on the opposite bank, was the citadel of Coblenz, which it dominates. It has a modern uncastellated appearance, but from the summit there is a wide view, not only up and down the Rhine, but also away to the north-west to the volcanic cones of the Eifel, for at Coblenz the valley opens for a short space and the gorge gives place to a small plain, the so-called basin of Neuwied. This is an almost quadrilateral area of plain extending from Coblenz to Neuwied, nearly flush with the river, and sunk, therefore, in the midst of the plateau. The river Wied joins the Rhine at its northern end, from a valley winding through the eastern plateau. Altwied, with the ruins of the castle of the Counts of Wied, stands some distance up this valley, and near it on the plateau is Mont Repos, a country seat of the present Prince of Wied, in the midst of a large park. Neuwied, at the mouth of the stream, has a curious interest. Founded after the Thirty Years' War, it became the refuge of all manner of sects, and these have lived together to the present day on a system of mutual toleration, rare in all countries at the time of its commencement. More especially is Neuwied associated with the Moravian Brothers, a Protestant sect akin in their views and

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manners to the English Quakers. The chief industry of Neuwied is the keeping of school.

Below the basin of Neuwied the gorge is renewed, but not with the same regularity as in the upper gorge between Bingen and Coblenz. There are tributaries entering from the left hand and the right; there are small deltas; moreover the rock structure has been broken by volcanic eruptions. Hence there is a greater sense of variety and of spaciousness along the twenty-five miles of the river between Neuwied and Königswinter than in the gorge above Coblenz. Immediately opposite to Neuwied the heights commence on the left hand, where they are crowned by the Weissenthurm, marking the boundary between the possessions of the Electors of Trier and of Cologne. Beyond the entry of the little river Nette there follows the small town of Andernach with some 10,000 inhabitants, engirt by walls and set with towers. Andernach is an ancient place of Roman origin, of importance in Frankish times and a free imperial city in the Middle Ages, but in the end obtained by the Archbishops of Cologne, and burnt by the French in the year 1688. Three miles further down on the opposite height are the ruins of the castle of Hammerstein, once an imperial residence. Then

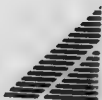
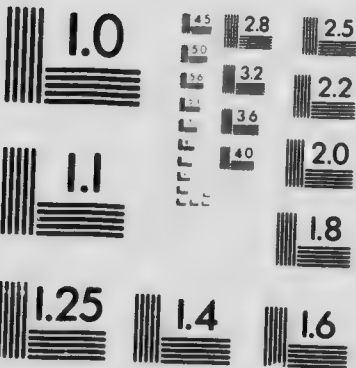


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THE RHINE GORGE

on the left bank is the castle of Rheineck, of which a single tower has been preserved and incorporated into a modern residence. Both of these castles, Hammerstein and Rheineck, were destroyed by the Electors of Cologne.

Along all this part of the Rhine there are great quarries of volcanic rock. Near Neuwied there is pumice which is made into cement, but below Andernach is basalt, which is sent down the Rhine for the building of the dykes which retain the waters of Holland. The basalt is of the usual black hexagonal columnar character and forms fine cliffs in the quarries. Past the mouth and delta of the Ahr, Remagen is reached, near which, in the Apollinaris springs, we have another remnant of volcanic action. These springs, now owned by the well-known Apollinaris Company, were so named from the beautiful Apollinaris Church, which contains the head of St. Apollinaris, an early Bishop of Ravenna. The relic was being taken down the river as a present to the Archbishop of Cologne when the vessel was miraculously stopped, and its burden was landed and deposited on the spot where it now rests. From this point there opens out the last and in many ways the grandest reach of the Rhine Gorge. Extinct volcanoes rise on

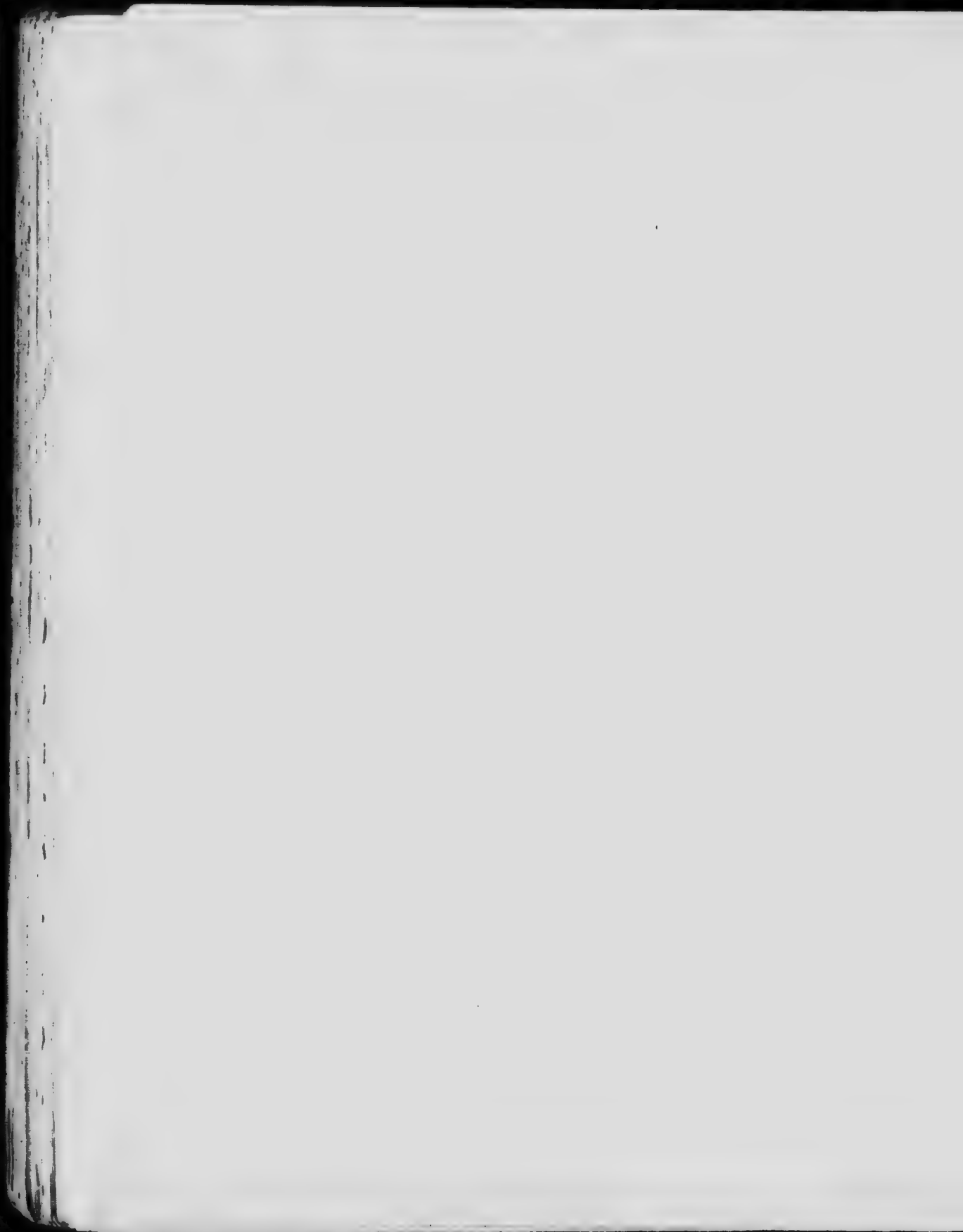
THE RHINE

either side, the Roderberg on the left, the hill group of the Seven Mountains on the right, and in the river between is the island of Nonenwerth. Vineyards are planted along all the foot-slopes and the peaks are thickly clothed with forest, but the lower hills and the banks of the river itself are bright with the villas of the capitalists of Cologne and of the great industrial centres of the Rhine Province.

It was inevitable that legends should gather round these conspicuous heights at the mouth of the gorge, for they are visible far out in the northern plain over which the traffic disperses from the passage to which it has been confined in the highlands. High on the left hand are the remains of the castle of Rolandseck, looking across to the Drachenfels, the most conspicuous of the Seven Mountains, and below is the island of Nonenwerth. Roland was a knight of Charlemagne, whose name attaches not only to this district near the capital city of Aachen but also to the distant Pyrenean frontier, where Charlemagne struggled with the Saracens. When a guest at the castle of Drachenberg, on the Drachenfels, Roland fell in love with the Count's daughter Hildegund, but was summoned to military service by his imperial master. Time passed and Roland did not return, so that



THE DRACHENFELS AND NONNENWERTH FROM ROLANDSECK



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Hildegund, despairing, took refuge in the cloister of Nonenwerth. Then Roland came back and hastened to the Drachenberg, but found that Hildegund had taken the veil. He built his castle at Rolandseck and looked down on to Nonenwerth to the cloister which imprisoned his love, and when after a time he heard that she was dead he never spoke more but in his turn died with his face to Nonenwerth. The buildings of the Nunnery of Nonenwerth re-erected in the eighteenth century still remain, but the foundation itself has been suppressed.

The point of deepest real interest, however, in this district is in the Seven Mountains. It is the ruin of the Cistercian Abbey of Heisterbach, destroyed only one hundred years ago, just before the time when men had learned to cherish the remains of the past. The pictures which it contained were removed to Munich, and are now among the chief treasures of the Pina-
kothek and of inestimable value for the history of Early German art. From the summit of the neighbouring Drachenfels are visible at times on the horizon of the northern plain the twin spires of Cologne Cathedral and, nearer at hand, the city of Bonn. The castle of Drachenberg belonged originally to the Archbishop of Cologne, of whom it was held by the

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Counts of Drachenfels. The Cathedral of Cologne was built of stone from these mountains.

The wide uplands which north of the Lahn and the Moselle form the Rhine Schist Land to east and to west of the river have no conspicuous crest lines to compare either in height or in continuity with those of the Taunus and the Hunsrück. Yet on the whole the districts of greatest elevation exhibit a certain symmetry, for they commence not far from the Rhine a little north of Coblenz and trend away north-eastward and north-westward so as to clasp in the angle between them the southward extension of the plain past Cologne and Bonn. On the east is the Westerwald, connected by means of the Rothaar ridge to the Kahle Astenberg in the Sauerland, in which, at an elevation approaching 3,000 feet, the plateau to right of the Rhine culminates. This irregular belt of greatest elevation forms the water-parting; from the north-west of it flow away to the Rhine the Ruhr and its tributary the Lenne, the Sieg and the Wied; from the south-east flow the Eder, to join the Weser, and the Lahn, which at first runs eastward as though to the Weser and then southward and finally westward to the Rhine. In its middle, southward, course the Lahn emerges completely from

THE RHINE GORGE

the Schistose Upland and between the twin university towns of Marburg and Giessen flows through the Hessian Depression which is continued southward through the Wetterau to Frankfurt and so to the Upper Rhine Valley. Giessen owes a certain importance to the fact that the Lahn there turns westward and re-enters the Schist Land, making a deep valley through it. The roads converge from north, east and south to take advantage of the entry to this valley, and the modern railroad from Berlin bifurcates at Giessen to pass, on the one hand, through the Wetterau to Frankfurt and the south and, on the other hand, through the Lahn Valley to Coblenz and the south-west. Marburg and Giessen were rival universities founded by the Hessian families of Kassel and Darmstadt, but Marburg is now contained in the Prussian province of Nassau.

Below Giessen the first place of note in the Lahn Valley is Wetzlar, a free imperial town as late as the beginning of the nineteenth century, and the seat of the Imperial Court of Justice after its removal from Speyer when that place was destroyed by Louis XIV.

It was in connection with this court that Goethe gave lustre to Wetzlar by residing there for a time

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and writing there his *Sorrows of Werther*. Wetzlar has an ancient cathedral, but in this respect it is excelled by the city of Limburg further down the river, which contains one of the most remarkable ecclesiastical monuments in Germany, a cathedral with seven towers, built at the time of transition from the Romanesque to the Gothic style. The Cathedral of Limburg stands high above the Lahn, with narrow streets climbing the hill from the water's edge, and is a striking object in itself and in its position. The original basilica on the site is said to have been founded at the beginning of the tenth century.

The River Lahn is provided with numerous locks and descends from a level of 500 feet at Wetzlar to one of 200 feet at its confluence with the Rhine. There is considerable downward traffic of rich iron ore, which occurs in quantity between Wetzlar and Limburg. Between Limburg and Lahnstein, on the Rhine, the Lahn competes with the Rhine and the Moselle both for natural beauty and for the series of romantic castles which frequently crown the heights on either side. These castles are most of them connected with the history of the House of Nassau, which from the Middle Ages to the War of 1866 owned most of the lower valley of the Lahn and much

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of the tableland to north and south of it. First, only three miles from Limburg, there is the castle of Diez, and a mile from it the Schloss Oranienstein. The latter did not belong to the family of Nassau but to that of Anhalt Schaumberg. Then follow the striking ruins of the castle of Balduinstein, and then the ruins of Laurenburg, the oldest home of the Nassau family. Ahnstein comes next, at first a castle but afterwards a monastery, and then we approach the sister towns of Nassau and Ems, about four miles apart.

Opposite to Nassau, on the wooded heights above the deep-cut valley, are the ruins of the Nassau castle, but of more immediate historical interest are the ancient and modern castles of the Stein family, associated with the great minister who a hundred years ago raised Prussia from the impotence which followed upon the defeat of Jena and laid the foundations of the modern power which were built upon by Bismarck. Stein was born at Nassau, and to the end of his life it was his favourite home.

Ems fills the bed of the valley where the little Ems River enters from the north. The town stands only some 260 feet above the sea, but the Malberg, wooded to its summit, rises to nearly 1,100 feet on the south

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bank and the Bäderlei to some 870 feet on the north bank. Hot springs have made the fortune of the place, and it was doubtless on their account that the Romans carried the Pfahlgraben, which here formed the boundary of the Empire, northward over the high country in such manner as to cross the Lahn just above the position of Ems. But Ems, like Nassau, has its modern historical interest. In the Kurgarten there is a slab of stone on the spot where in July, 1870, the King of Prussia gave the answer to the French Ambassador Benedetti from which the great war with France ensued.

The remaining quadrant of the Schistose upland forms the Eifel plateau in the angle between the Rhine and the Moselle. It is usually divided into four parts. Near to the Rhine, in rear of Andernach and Remagen, is the Hohe Eifel, which, as its name betokens, contains the highest points. Westward of this, some thirty miles, is the Schnee Eifel or Snow Eifel, which on account of its salient westward position receives the first moisture brought by the west winds from the ocean, and to this circumstance owes its abundant winter snow. Southward of the Hohe Eifel and the Schnee Eifel, towards the Moselle, is the Vorder or Volcanic Eifel, and away to the north

THE RHINE GORGE

of the Schnee Eifel, overlooking Aachen and the great northern plain, is the Hohe Venn, forming a prominent edge from south-west to north-east, at the foot of which are the manufacturing town of Verviers and the Belgian watering place Spa. Two valleys, that of the Ahr flowing to the Rhine and that of the Kyll flowing to the Moselle, are the most beautiful features of the Eifel, and together offer a way through the plateau which is almost continuous. From near the waterparting between them there rises also the Erft, a small stream which flows northward parallel to the Rhine at Bonn and Cologne and only swerves eastward to join the Rhine a little above Düsseldorf. A Roman way, passing through a depression between the Hohe Eifel and the Schnee Eifel, leads from Cologne by the Erft and the Kyll Valleys to Trier on the Moselle.

High above the mouth of the Ahr and above the Rhine at Remagen, rises to near 1,000 feet a basaltic wall crowned by the ruined fortress of Landskron, from the foot of which flow the Apollinaris springs. Six miles up the valley is Neuenahr, a watering place with hot springs, and almost adjoining is Ahrweiler, a far more ancient place which still retains its walls and gates, although the old houses were almost com-

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pletely destroyed by the French in 1689. The Ahr Valley here emerges from a winding ravine, but the railway and the road shorten the distance to Altenahr by piercing the most prominent ridge, so avoiding the most devious circuit. Altenahr, at the foot of a castle-crowned cliff, lies beyond the ravine in a most beautiful position, and then there follows more rocky scenery, until at the last the road winds up on to the plateau at the foot of the Hohe Acht and the Nurburg, the summits of the Hohe Eifel, each of more than 2,000 feet.

The Kyll valley is traversed by the railway from Berlin to Trier by means of a succession of bridges and tunnels between limestone cliffs and steep, wooded slopes. Gerolstein and Kyllburg are small towns beautifully placed on this valley, and there are the usual castle ruins on the heights, and also frequent remains of Roman villas along the road between the two great centres of Cologne and Trier.

More curious, although not more beautiful than the trenched valleys, are the volcanic remains of the Vorder Eifel between the Kyll valley and the Rhine. This district resembles that of Auvergne in Mid France, although the volcanoes are on a smaller scale. Cones which still retain their crater-dimples are scat-

THE RHINE GORGE

tered over the plateau, and between them in certain parts are deep, rounded lakes, produced by volcanic explosions of such force as to destroy the cone which doubtless once stood upon their sites, and to substitute a deep hole in the ground. The most striking of the volcanic mountains is the Mosenberg, a hill which bears four craters ranged from north to south, while a great lava stream descends from its southern end. One of these craters contains a little lake, but the greater volcanic lakes of the Eifel are evidently of a quite other origin. They are due to holes exploded in the solid ground, and are not in the summits of up-heaped lava. These basins of explosion are locally known as Maare. The largest of them is the Lake of Laach, not far from the Rhine at Andernach. It is nearly circular and some five miles round, while it is nearly 200 feet deep. There are at least five volcanoes with distinct craters in the immediate neighbourhood. The Lake of Laach has no direct outlet to the river, although an artificial tunnel was constructed in the Middle Ages, and has been reopened in recent times. A circle of wood descends the slope on all sides to the water's edge, where stands the beautiful Romanesque Benedictine Church of the Abbey of Laach with a dome and five towers, worthy

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to rank with the great monuments of the Romanesque architects at Mainz, Worms and Speyer. A stream of carbonic acid gas issues from near the water not far away, doubtless a last remnant of the underground activities which shaped this now singularly tranquil and beautiful retreat.

Chapter Ten

THE LOWER GERMAN RHINE

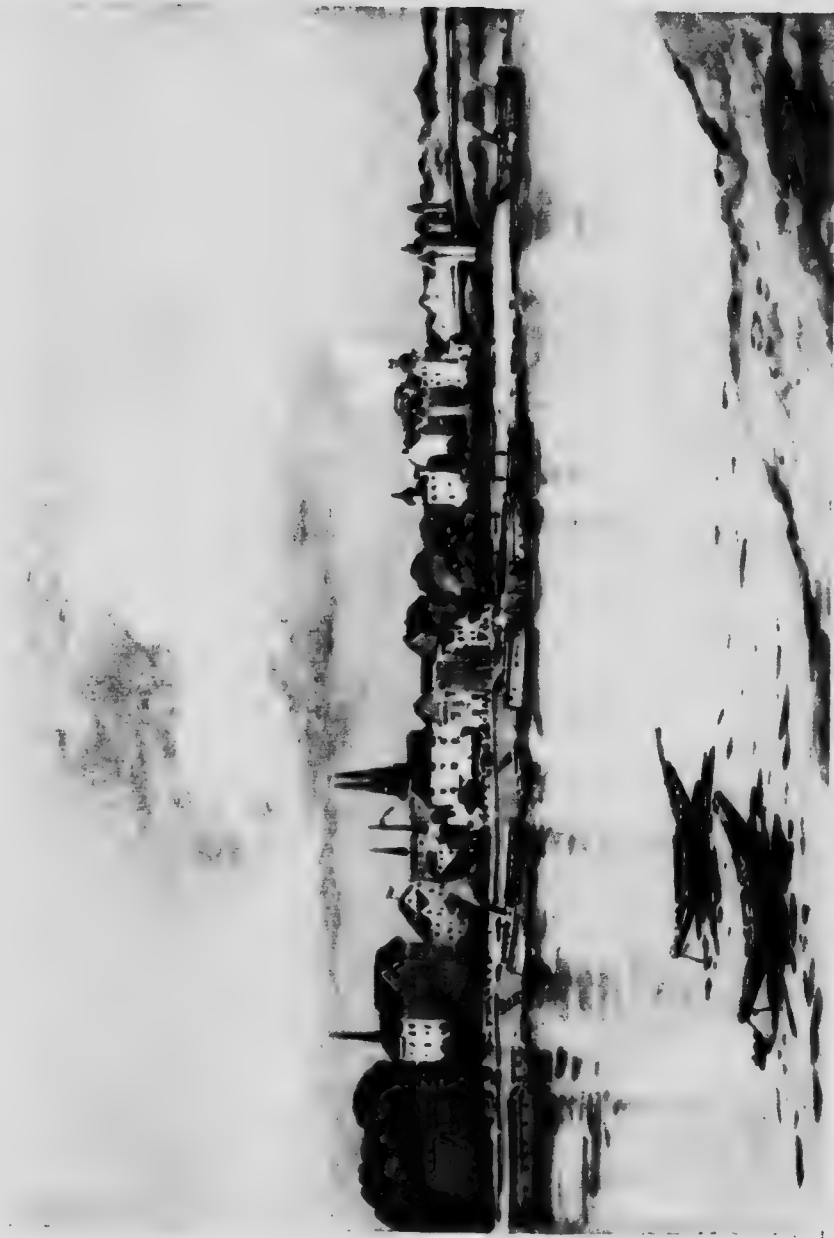
AS seen on the map the great lowland entered by the Rhine at Bonn presents a remarkable outline. The upland border extends eastward from the Meuse past Aachen towards Bonn. Beyond the Rhine it strikes northward, at least until opposite Cologne, and then eastward in the Sauerland to the Egge ridge, which again turning northward connects with a low north-westward range of hills, called the Teutoburger Forest. This last range strikes for more than sixty miles through the Westphalian Plain, and on account of the lowness of the surrounding ground possesses an importance which could not be attributed to its absolute elevation. The Rhenish lowland thus makes two great angular bays into the upland; in the centre of the first stands Cologne, in the centre of the second is Münster. It must not, however, be thought that the lowland, at any rate within the German frontier, is a dead level. The ground on both sides of the Rhine undulates for the

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most part, and along the foot of the Sauerland from the Rhine eastward there is a distinctly hilly belt whose edge sinks to the lower plain midway between the parallel courses of the Ruhr and Lippe, tributaries of the Rhine. The Lippe flows westward just within the plain, the Ruhr just within the hills.

South of the Ruhr two streams, the Lenne and the Wupper, rise in the Sauerland and flow north-westward in valleys cut into the hilly country, the Lenne to join the Ruhr, but the Wupper to bend completely round westward, southward and finally south-westward to the Rhine, about halfway between Cologne and Düsseldorf. Where the Wupper flows north-westward, it was for a short distance the boundary in the earlier Middle Ages between the Duchies of Saxony and Lotharingia, or in other words between the Saxon and Frankish races. This line between the Saxon and the Frank lying well to the east of the Rhine bank now forms the frontier between the Prussian provinces of the Rhine and of Westphalia. In the intervening period the same frontier separated the Saxon Duchy of Berg from the Lotharingian county of Mark.

Through the later Middle Ages, and down to the time of the French Revolution, four strips of territory



BONN.

THE LOWER GERMAN RHINE

lay side by side through the Rhine Plain of Germany. The west bank above and below the City of Cologne belonged to the archbishops of Cologne. West of them in the valley of the Roer, flowing northward between Cologne and Aachen to join the Meuse, was the Duchy of Jülich. The right bank of the Rhine, back to the Saxon frontier, belonged to the Duchy of Berg, and within Saxony the first strip of territory, parallel to Jülich, Cologne and Berg, was known as the County of Mark. Lower down the Rhine beyond these four territories, within the district of Germany which on both banks of the Rhine invades the outline of Holland, were the Duchies of Cleve and Gelders, while on the upper waters of the Ruhr and Lippe were ranged two ecclesiastical territories, the Duchy of Westphalia adjacent to the County of Mark, and the Bishopric of Paderborn. Westphalia in this older and narrower sense was an outlying possession of the Electors of Cologne. Then there was the Bishopric of Münster, partly no doubt within the basin of the Ems, but partly also within that of the Lippe, and wholly within the bay of lowland west of the Teutoburger Forest. A remarkable gap midway along the Teutoburger ridge permits of an easy passage through to the town of Bielefeld and to

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the Weser at Minden, and the little territories of Ravensberg and Minden astride of this way have shared the political fate of the principalities of the Rhenish side of the Teutoburger hills rather than that of their own side. They were obtained by the Electors of Brandenburg in the seventeenth century together with the Duchy of Cleve and the County of Mark, and became the first elements of the Westphalian and Rhenish territories of the Prussian kingdom. After the Napoleonic epoch Europe gave to Prussia in addition to Cleve and Gelders, also Jülich, Cologne, Berg and the Archbishopric of Trier, and these were formed into the province of the Rhine; while there were added to Minden and Ravensberg also the bishoprics of Münster and Paderborn, the ecclesiastical Duchy of Westphalia and the County of Mark, and these together made the province of Westphalia. From 1815 to 1866 these two provinces of the Frankish Rhineland and the Saxon Westphalia formed the western separated limb of the Prussian monarchy.

During the latter half of the nineteenth century the hilly district along the northern foot of the Sauerland, through which the Ruhr river flows, became the seat of a group of great industries. This strip of

THE LOWER GERMAN RHINE

broken ground, partly in the Rhine province and partly in Westphalia, is due to a belt of coal measures which here rest on the northern flank of the Schistose Upland, the strata dipping northward under the plain so that at great depth the coal can be reached even beneath the Lippe river which flows over younger formations well within the plain. The coal which is won in the Ruhr basin nourishes industries also on the west bank of the Rhine at Gladbach and Crefeld, and vast quantities are exported up the river to Cologne and places beyond. There are deposits of iron ore in these coal measures, and as we have already seen great deposits of rich iron ore are accessible in the Lahn and the Moselle valleys. The Rhenish and Westphalian coalfield has therefore become a centre of the iron and steel works, but it is also a seat of textile industries, and resembles therefore in the mixed character of its activities rather the Glasgow district in Britain than either the Lancashire or the Staffordshire districts.

It follows from these circumstances that the Rhineland and Westphalia present a combination of historic interest and modern industrial activities, although they lack the scenic interest of the Schistose tableland, except in the valleys of the Wupper and

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the Lippe. The contrast between the vast populations, now amounting to several millions, established upon and around the coalfields along the edge of the plain, and the sparseness of habitation on the exposed upland to the south may be compared to the similar contrast in England where the uplands of the Pennine Range separate the coalfields of the West Riding and Lancashire.

The centre of the whole Lower Rhineland outside the independent Netherlands is the great city of Cologne, the city, that is to say, which had colonial privileges in the time of the Roman Empire. Cologne rose to importance before the Christian era, for here the waterway along the river, and the great frontier road along the left bank, were intercepted by the road from the west following the edge of the highland from the Meuse through Aachen, and by another road from Trier and the south which utilized the Kyll valley and a depression northward through the midst of the Schistose upland. The river at Cologne makes a westward bend, so that the deeper water suitable for a landing place was towards the Roman bank. Moreover, the stream was here relatively narrow and was broken by an island, now annexed to the site of the city and obliterated. Re-



ON LEAVING KOEN (COLOGNE)

THE LOWER GERMAN RHINE

ligious importance was early given to the spot when the Romans compelled the German Ubii to cross to the left bank and to establish their national altar there. Cologne, therefore, naturally became the provincial capital of the Lower Germany, as Mainz was of the Upper Germany, and Trier of the Upper Belgica. When the Empire became Christian, a bishopric was, of course, established at Cologne. The metropolitan pre-eminence of the city was renewed when the Ripuarian Franks established themselves along the left bank of the river.

When Charlemagne made Aachen the northern capital of the renewed Empire, Cologne was the natural point of departure for his expeditions against the Saxons beyond the river. The bishopric was raised to an archbishopric with a province partly Cis-Rhenish but also largely trans-Rhenish and Saxon. Later, when the Duchy of Lower Lotharingia began to break into smaller units, the archbishops of Cologne essayed to obtain the temporal sovereignty of the west bank, but after a long struggle were compelled to recognize for the city of Cologne the rank of a free imperial town, while they removed their place of residence to Bonn, another Roman station higher up on the left bank.

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Cologne was admitted to the Hanseatic League and became the rival of Lübeck for its leadership. The commercial wealth of the city was based, so far as geography was concerned, chiefly on two facts. On the one hand the downward navigation of the river, which brought the wares of Italy and the Indies, here reached the point where easy land-ways dispersed over the Plain westward through Aachen to the cities of Flanders, and north-eastward through Westphalia to Lübeck and the Baltic. On the other hand the upward navigation from the sea brought a great traffic from London, where the merchants of Cologne had an agency established beside the Guildhall of the London citizens. It was in this time of wealth that Cologne was adorned with most of the medieval monuments, ecclesiastical and municipal, which still impart so rich an interest to the narrow streets of the central quarters of the city, and it was in this time that the Cathedral, greatest of all Gothic edifices, was projected and commenced. It was completed only within the last generation as a monument of German unity at last realized.

The Reformation brought about the fall of Cologne in two ways. In the first place there arose in the delta of the river the Protestant Power of the



KOLN (COLOGNE)



THE LOWER GERMAN RHINE

Netherlands which for long blocked the upward traffic from the sea; and in the second place the Protestants of Cologne itself were expelled, and carried their industries to neighbouring towns, Deuz, Crefeld, Elberfeld and Düsseldorf, where they soon became competitors of the city of their origin, to which there now remained only an ecclesiastical importance. A hundred years ago Cologne contained a hundred churches, and on account of the number of its monastic establishments was known as the German Rome.

In 1815, when the Rhine Province of Prussia was formed and the navigation of the Rhine was freed, the city began once more to develop a commercial importance, but it was not until after the war of 1870, when the ramparts were removed and a distant circle of forts substituted, that Cologne once more began to realize the advantages of her geographical situation. Although not placed upon the coal measures, Cologne is now the commercial centre which serves the industries both of the East Rhenish coalfield of the Ruhr basin and of the smaller West Rhenish coalfield of Aachen. It is the crossing point of the chief railway systems of Northern Europe, from Paris to Berlin, and from England and the Netherlands to Italy and Vienna. To the railway engineer the all-

THE RHINE

important consideration is ease of gradients, and the way along the edge of the plain was therefore the inevitable route from west to east, and the ways along the banks of the Rhine the equally inevitable course from north to south. Yet the Rhine is crossed at Cologne only by two bridges, the anciently established Bridge of Boats and the modern high level bridge which binds together the railways and also carries a road and tramway.

Above and below Cologne at roughly equal distances are the old Roman stations of Bonn and Neuss. The importance of the former was revived when the Archiepiscopal Electors made it their place of residence. Since the establishment of the Prussian régime, Bonn has retained a certain significance owing to the re-establishment of the University which had been founded in the previous century. Neuss, below Cologne, however, has had to surrender its importance to the city of Düsseldorf, on the right bank, owing to the fact that the Rhine has forsaken a former westward bend and now flows at some distance from the walls of the Roman station.

Düsseldorf became the capital of the Duchy of Berg, but not until that Duchy had passed to the Electors Palatine. Indeed Düsseldorf owes its not



THE QUAY AT DÜSSELDORF.

THE LOWER GERMAN RHINE

inconsiderable artistic and residential advantages to the comparatively short period between the destruction of the old Palatine capital of Heidelberg by the French in 1689, and the establishment of the new residence of the Electors at Mannheim in the following century. But like Mannheim, Düsseldorf, though bereft of its court, has obtained modern importance as a great Rhine port.

The earlier centres of the Duchy of Berg lay somewhat to the east of the Rhine bank in the basin of the little Wupper. This river and its tributary, the Dhunn, cut deep and intricate valleys into the hilly district at the northern foot of the Sauerland. Just where the Wupper makes its last important bend, a right angle from south to west, stands the little town of Burg, and above it the castle of Burg, which was the chief seat of the Counts of Berg during the greater part of their history. Their original home was at Altenberg amid the woods of the Dhunn valley, and here a beautiful Abbey Church still contains the tombs of the family. In close proximity to these old-world spots are now great centres of modern industry, Remscheid and Solingen, on either brink of the Wupper valley just north of Burg, which are connected by a daring modern railway bridge a third

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of a mile in length and nearly four hundred feet in height. Solingen is the chief German seat of the cutlery trade, renowned for many centuries for its sword blades. But the largest of the manufacturing towns of the Wupper are set as it were in chain along the valley bottom, occupying the whole length of the east and west portion of the valley north of Remscheid. Barmen and Eberfeld extend for six miles along the bottom on both banks with wooded hills rising to north and to south. Together they have some 400,000 inhabitants, and manufacture nearly every kind of textile. They lie due east of Düsseldorf, which is their Rhine port.

There is an interval without large towns between the Wupper and the Ruhr, but north of the Ruhr, from its mouth for some forty miles eastward, there is a belt ten miles broad of nearly continuous mines, factories and towns. The port of this district is the great joint town of Duisburg, Rohrort and Meiderich, with a population of some 200,000. Duisburg is an ancient place, where was born Gerard Mercator, the originator of the map projection which bears his name. It is now one of the greatest river ports in the world, exporting coal both up and down the river, and receiving timber from the Upper

THE LOWER GERMAN RHINE

Rhine and corn from foreign countries. It is the place where most of the large Rhine barges and steam tugs are built. Eastward of Duisburg the best known centres are Essen with the Krupp gun works, employing 30,000 men, and Dortmund, like Duisburg, an old city which has been caught into the modern industrial growth.

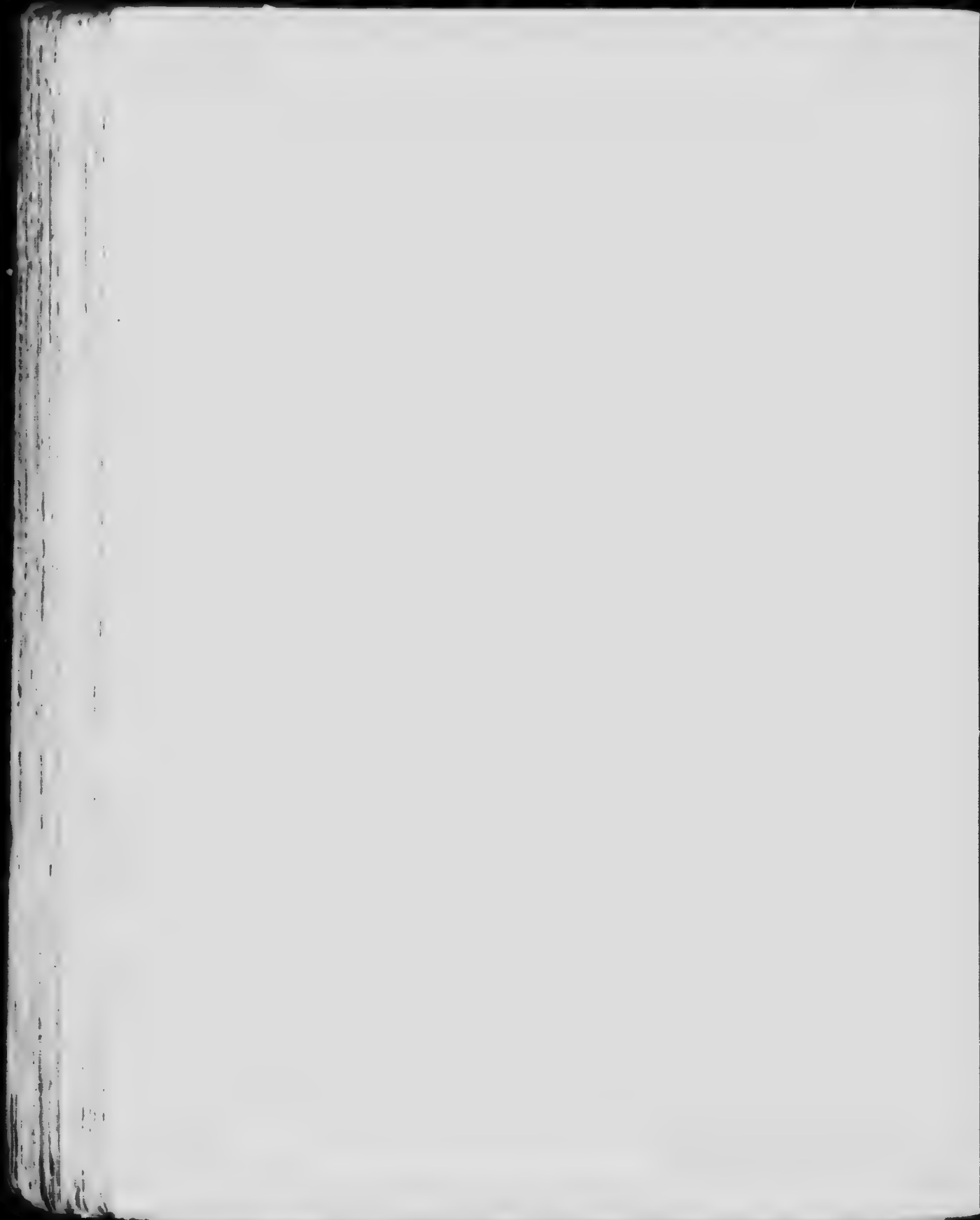
In close proximity to all the activity based on the coalfield of the Ruhr there are set along the banks of the Rhine, or along the edges of its flood plain, little dead cities which have played their considerable parts in history and still retain significant monuments. Such, for instance, is Zons on the left bank a few miles north of Cologne, a mere village, but still girt with its medieval walls and several towers. A short way north of Düsseldorf and on the right bank is Kaiserswerth, another little place with a remarkable Romanesque church, where are preserved the bones of one of those Irish missionaries, the traces of whose activity are met with so frequently through all the length of the Rhine basin. There are also here the remains of an Imperial palace associated with many events in medieval history. Finally, Kaiserswerth embodies the memory of a great and celebrated siege by the Dutch at the beginning of the

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eighteenth century. At Wesel, where the Lippe joins the Rhine, there is a fine Gothic church in which English Protestant exiles of the reign of Queen Mary received hospitality and were allowed for a time to dwell. But by far the most striking of these little towns on the Lower German Rhine is Xanten, the birthplace of Siegfried, the slayer of the dragon in the Nibelungenlied. It was of Roman foundation and possesses one of the most beautiful of all Gothic churches with lofty Romanesque towers. Unlike Zons, Kaiserswerth, and Wesel, Xanten stands a little way from the modern course of the Rhine on the line of rise at the western edge of the flood plain, and northwards and southwards are two pairs of towns similarly placed, Kalkar and Cleve to the north, Rheinberg and Mors to the south. All these places were founded in times when the Rhine, swerving westward, washed the foot of the slope from which they now overlook the flood plain. Cleve is built round a knoll, the Schwanenberg, on the top of this slope, and upon this knoll is set a high tower, the Schwanenthurm, from whose summit there is a wide view northward, eastward, and southward over the flat green meadows of the Rhine, while there rises westward an isolated hill some 300 feet high, lofty



WESEL



THE LOWER GERMAN RHINE

for this part of the world, and beyond this again spreads a broad forest, the Reichswald, some thirty square miles in area. Rheinberg is a little place which has the distinction of having been besieged nine times in fifty years at the beginning of the seventeenth century. The great modern industrial town of Crefeld occupies a position on the edge of the flood plain which completes the long series from Cleve southward.

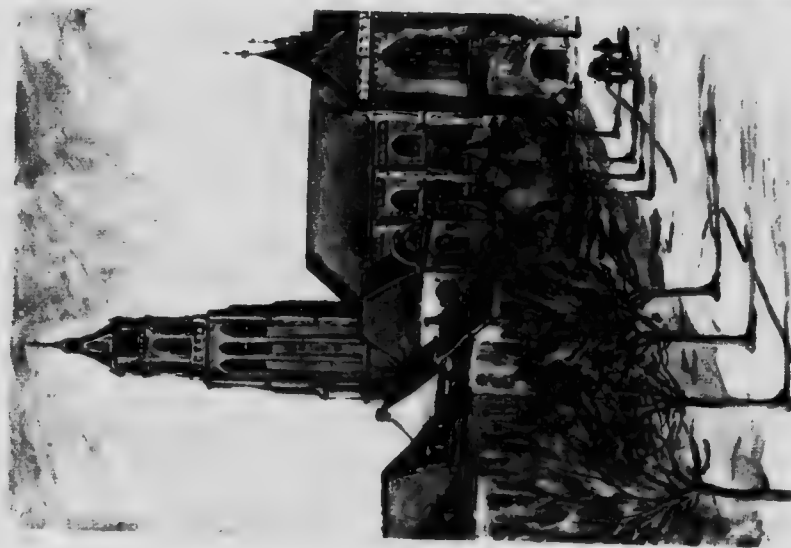
The remaining German towns of the plain west of the Rhine form two groups. In the north, from the latitude of Düsseldorf on the Rhine and Roermond on the Meuse, there is a series of places set along the shallow valley of a sluggish brook, the Niers, which curiously prolongs to the Meuse the direction of the Erft, when the latter tributary turns eastward to join the Rhine just above Neuss. The Erft and the Niers successively occupy the same valley which originates in the Schistose plateau and runs parallel with the greater valley of the Rhine for a distance of no less than a hundred miles. Along the Niers we have in succession the modern industrial centre of Münschen-Gladbach and the historic little towns of Gelders and Goch.

The other group of the towns of the plain west-

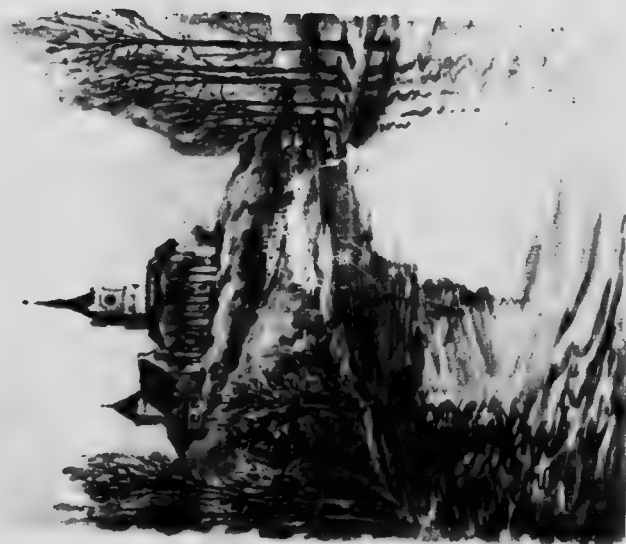
THE RHINE

ward of the Rhine belongs to the basin of the Roer, which originates in the Hohe Venn not far from the Belgian frontier. On the banks of the Roer itself are Durren, the half-way house on the great historic road between Aachen and Cologne; and Jülich, the capital of the former Duchy of that name.

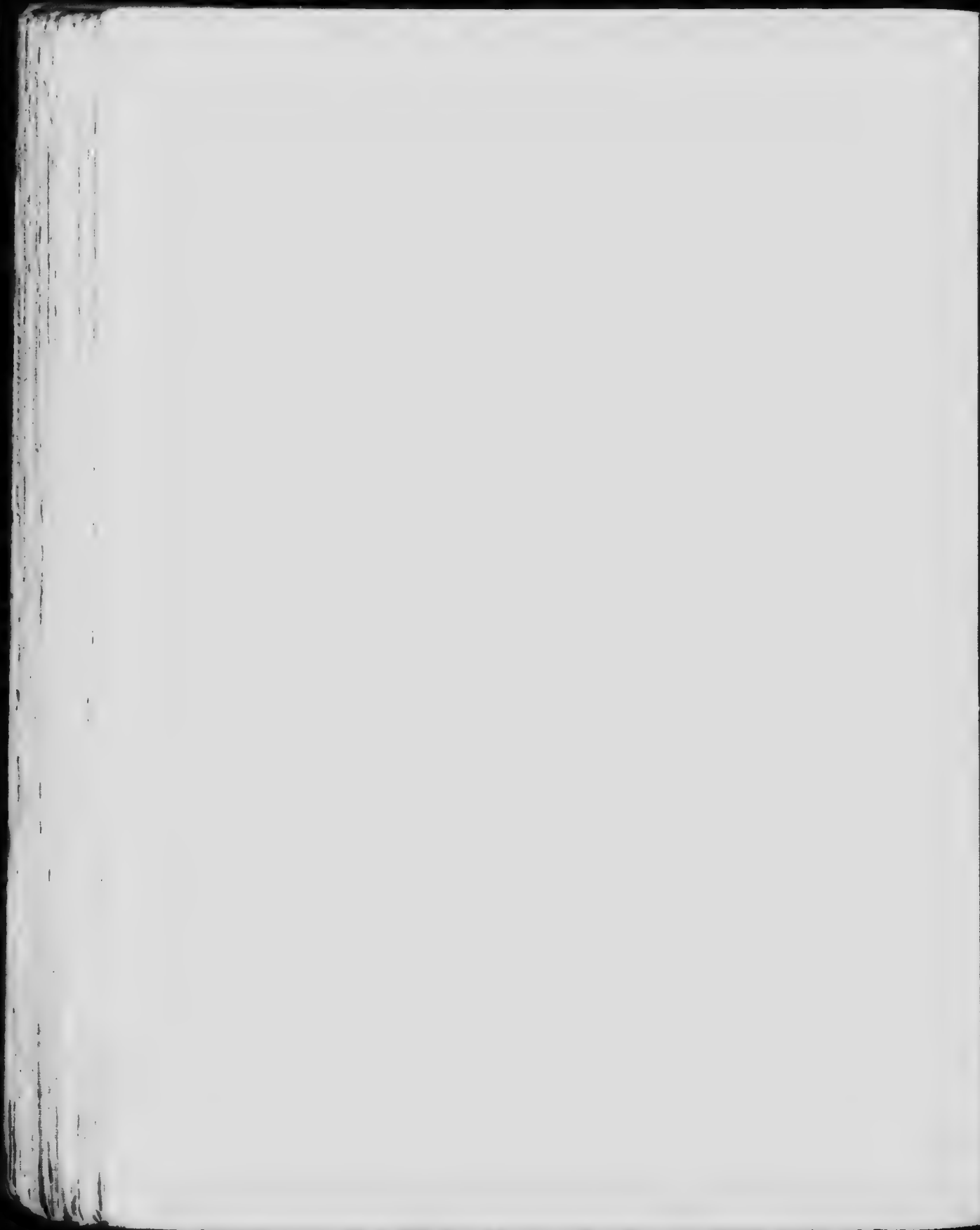
The chief centre of population, however, on the end of the coal-field which here intrudes into Germany from Belgium is Aachen near the head streams of the Wurm, a tributary of the Roer. It is now a considerable manufacturing city, with nearly 200,000 inhabitants. In the centre of it are preserved the monuments of its earlier importance. They belong to several successive epochs, for Aachen is a place which has had a certain notability in all historic times. As the name implies, its foundation was due to the hot springs which attracted the attention of the Romans, who called it *Acquæ Grani*. The Frankish kings often dwelt here, drawn to it in part, it may be, by these same hot springs, and in part by the facilities for hunting in the great forest of the neighbourhood, but chiefly no doubt for strategical reasons, since Aachen is placed on the road from Cologne and the Rhine westward to the Meuse and Flanders, and into Northern France beyond. A short



THE GROOTE KERK (ARNHEM)



THE SCHWANEN TORM (CLEVE)



THE LOWER GERMAN RHINE

distance to south of the city the hills rise which are the beginning of the Schistose Uplands. Here, on the border between the East and West Frank dominions, was the palace of Charlemagne, and the centre of the great empire which for the first time united into one Europe the Teutonic and the Romance countries. Here there still stands the octagonal church which Charlemagne built with columns of marble and granite brought from Rome and Ravenna and Trier. In the centre of the pavement is a great plain tombstone bearing the words "Carolo Magno," and in this same church is the throne of Charlemagne, upon which thirty emperors of the Holy Roman Empire were afterwards crowned.

Chapter Eleven

THE LOWER MEUSE AND THE SCHELDT

THE traveller approaching Calais from the sea obtains his first indication of the position of the town when he sees the lighthouse tower, and presently the church, rising apparently out of the water, for Calais stands within the dead level of the Low Countries. A little to the right, however, is a high cliff of white chalk, from which a belt of rolling downs extends inland in a south-easterly direction. These downs have a steep escarpment overlooking the eastward plain for a distance of some sixty or seventy miles. The railway to Paris ascends the brink obliquely a short distance from Calais, and passengers have here before them one of the great physical contrasts of Europe. Below to the east is the plain of Flanders, the beginning of the Netherlands; above to the west is the old province of Artois, attached politically at one time, it is true, to the Netherlands, but by physical structure and lan-

THE LOWER MEUSE AND SCHELDT

guage essentially the beginning of France. The plain of Northern France is for the most part underlaid by the chalk which commences in this scarp overlooking Calais, and by contrast with the Flemish levels of sand and alluvium, the French plain is a low undulating plateau.

Studied on the map, this line of separation between the Netherlands and the true France is continued with only minor deviations in a south-eastward direction to the source of the Meuse, dividing throughout its length the drainage which flows north-eastward by the Meuse and the Scheldt towards the Rhine from the drainage which flows south-westward by the Marne and the Oise to the Seine, or by the Somme north-westward to the Channel. There is a marked contrast, however, between the northern and southern halves of this significant waterparting. In the north it is the Netherlands to the east which lie low, and the French countries of Artois and Picardy to the west which lie relatively high. In the south, on the other hand, the high country of Lorraine is placed to the east and the relatively low country of Champagne to the west. The transition takes place where the Ardennes from the east infringe upon the line which thus separates the Rhine-ward and the Seine-

THE RHINE

ward streams. In other words there are four distinct levels to be considered, the lowest is in Flanders, from Calais eastward; the next, rather higher, extends from Artois and Picardy into Champagne; the third, which is still higher, forms the country of Lorraine; and the highest is the Schist plateau of the Ardennes, extending westward across the Belgian frontier just into France.

Where the Ardennes sink to the French plain there is a centre of drainage from which flow away in various directions the Oise south-westward to the Seine, the Somme north-westward to the Channel, the Scheldt northward towards the North Sea, and the Sambre north-eastward to Namur where it joins the Meuse. The Meuse itself, derived from the southern edge of the plateau of Lorraine, flows as we have seen northward with hardly a tributary for a distance of nearly 150 miles, and then traverses the west end of the Ardennes by means of a gorge which winds intricately through the highland like the gorge of the Moselle, until at Namur it emerges among the lower hills which descend to the Netherlands plain. There the Meuse accepts the direction of its tributary the Sambre and flows away north-eastward to Liège, and then gradually northward and finally westward

THE LOWER MEUSE AND SCHELDT

to join the Rhine, one of whose chief mouths bears curiously the name of Maas of Meuse.

The northern edge of the Sambre and Meuse valley as far as Liège is formed by a brink unbroken by any important tributary, and from the top of this brink a low tableland slopes gradually northward until it sinks into the Flemish lowland in the neighbourhood of Brussels. Thus the valley of the Sambre-Meuse forms a trench right across Belgium, cut like the valley of the Westphalian Ruhr into the northward slope from the Schist Highland in such manner as to detach the lower portion of that slope from the upper. The main supplies of water are of course derived from the higher ground to the south; the Meuse itself enters from that direction at Namur, and a whole group of tributaries which join to form the Ourthe enter from the south at Liège.

From the top of the left brink of the Sambre-Meuse valley there begins a northward drainage to the Scheldt, so that there is here as sharp a line of waterparting as along the eastward brink of the chalk country from Cape Griz Nez near Calais south-eastward. There is a remarkable symmetry in the courses of the Scheldt and the Meuse. Both of them flow from the south; they each receive from

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the west their chief tributary; the Meuse receives the Sambre at Namur, and the Scheldt receives the Lys at Ghent. Below the point of confluence each of them bends sharply eastward, accepting the direction of the tributary, and then, the one at Liège and the other at Antwerp, they turn northward and finally westward to the sea. A short distance above Antwerp the Scheldt receives through the Rupel the waters of a group of tributaries, the Nethe, the Dyle, and the Senne, just as the Meuse is reinforced at the corresponding point, Liège, by the Ourthe tributary formed by the confluence of a similar group of streams, the Vesdre, the Ambleve, and the Upper Ourthe. In a word the Hesbaye or low plateau above the left brink of the Sambre-Meuse valley has the same relation to the basin of the Scheldt that the loftier Ardennes plateau has to the basin of the Meuse. The chief contrast in the two rivers is precisely what we should expect from the different levels of their northward drainage slopes. The Meuse flows rapidly, being fed by the waters of the Ardennes; the Scheldt, on the other hand, being derived principally from the comparatively low Hesbaye, flows sluggishly. The Scheldt is affected by the oceanic tide as far inland as Ghent on the main river

THE LOWER MEUSE AND SCHELDT

and to within a few miles of Brussels on the Senne-Rupel.

East of Antwerp the space between the Scheldt and the Meuse is mainly occupied by an unfruitful district of sandy hills known as the Campine, through the midst of which runs the present frontier between Belgium and Holland. Westward of Antwerp the surface of the ground in Flanders is also naturally formed of sand, but it lies low and level. By the work of many generations the underlying clays have here been mixed by deep digging with the superficial sands, so that Flanders, in contrast to the Campine, has been made one of the most productive lands in Europe. But the sand dunes along the coast from Ostend past Dunkerque to Calais remain as a mark of the former sandy and sterile condition of this region. The country of the Hesbaye south of the Campine and of Brussels rises with slight undulations to the brink of the Sambre-Meuse Valley and is naturally of a more fertile character, although now inferior in productivity to the artificially-made soil of Flanders. The naturally most favoured district, however, of the Scheldt basin is the land of Hainault or Hennegau, through the midst of which, past Cambrai, Valenciennes and Tournay, the Scheldt flows

THE RHINE

from its southern source. Here the Scheldt intrudes, between the sources of the Sambre and the Somme, to the very foot of the Ardennes outlyers. The subsoil of Hainault is of a varying character and the surface irregular in contour.

Between Ghent and Antwerp, engirt on three sides by the course of the tidal Scheldt and limited westward by a depression through which has been recently constructed the ship canal from Ghent to Terneuzen, is the land of Waas, chiefly of marsh, now drained and fertile, lying below high-water level, with two or three tracts of slightly higher ground, the whole comparable to the Isle of Axholme in that corner of Lincolnshire which lies beyond the Trent. In the division of the Empire of Charlemagne the land of Waas seems to have been adopted as a natural frontier between the western land of Carolingia and the central land of Lotharingia. From Ghent southward the boundary was formed for some distance by the course of the River Scheldt. Thus the County of Flanders, which at first apparently did not include the city of Ghent, arose as a fief of the French crown, while the country east of the Scheldt, together with the land of Waas passed in the year 887 with the Duchy of Lower Lotharingia to the German

THE LOWER MEUSE AND SCHELDT

allegiance. The County of Flanders of course included beyond the modern Belgium the northern portion of the French department of the Nord from Dunkerque to Lille. At a later time the land of Waas was annexed to Flanders, and thus from a base along the coast Flanders extended to the Scheldt, with two considerable limbs, the one eastward into the bend of the Scheldt opposite to Antwerp, the other southward along the bank of the Upper Scheldt as far as Douay.

The Duchy of Lower Lotharingia, which extended from the Scheldt to beyond the Rhine, as far as the boundary of Saxony, was divided in the Middle Ages into a number of minor fiefs and ceased to exist. These fiefs were in the first place the County of Berg beyond the Rhine, and the Archbishopric of Cologne and the Duchy of Jülich in this side of the Rhine, which together with the County of Cleve and the Upper Duchy of Gelders have been incorporated into the modern Rhine province of Prussia; then in the second place a group of fiefs which have gone in the main to form the modern Belgium. Of these the chief were the Duchy of Brabant, equivalent roughly to the hill country of the Campine and the basin of the Rupel; the County of Hainault lying east of

THE RHINE

the Upper Scheldt and including the headwaters of the Sambre; the County of Namur round the confluence of the Meuse and the Sambre; the Bishopric of Liège with wide territories in the basin of the Sambre-Meuse, and the Duchy of Limburg in the hilly district of the Vesdre between Liège and Aachen. The cities of Aachen and Cologne were free imperial towns. For many centuries in the Middle Ages this distribution of political authority was maintained, and the map afforded no adumbration of the modern kingdom of Belgium. Except for the basin of the Lys, the west Flemish tributary of the Scheldt, the whole region belonged politically as well as physically to the German Rhineland. In the south, on the Schist plateau, the Duchy of Luxemburg came gradually to contain territories which had pertained originally some to the Upper and some to the Lower Lotharingia, and thus became in some sort a buffer land between the two natural regions west of the Rhine, that of the Upper Moselle and Upper Meuse, and that of the Lower Meuse and Scheldt.

Late in the Middle Ages the House of Burgundy, basing itself upon Brabant and its capital Brussels, gradually collected under its sovereignty all the more western of the duchies and counties of Lower Lothar-

THE LOWER MEUSE AND SCHELDT

ingia, with the exception, of course, of the ecclesiastical territory of Liège. Within France, and nominally as lieges of the French king, the Burgundian Dukes held the counties of Flanders and Artois; within Germany, and nominally as the lieges of the Emperor, they held the duchies of Brabant, Limburg, and Luxemburg, and the counties of Namur and Hainault, besides other territories in the Rhine delta northward. But it was not until the time of Charles V, heir of the Hapsburgs as well as of the House of Burgundy, that Flanders and Artois were detached from the crown of France. In the wars of Louis XIV the western edge both of Flanders and Hainault together with the whole County of Artois were re-annexed to France, and have since become the modern departments of the Nord and of the Pas de Calais. After the French Revolution, Belgium, and Germany west of the Rhine, became for a few years a group of French departments, until in 1815, owing to the secularization of Liège and Cologne, there emerged the coherent modern territories of the Prussian Rhine Province and the Belgian provinces of the Kingdom of the Netherlands. Finally in 1830 Belgium was separated from the Netherlands and lost the south-eastern half of Luxemburg.

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The basins of the Scheldt and Lower Meuse have, and through history have had, a European importance in two respects, the one strategical and the other industrial. If we examine the map of Belgium we shall see that the slope from the summit of the Ardennes to the sea coast is divided by the eastward courses of two rivers into three belts. The tidal Scheldt flows from Ghent to Antwerp, and north of it, subject to flood and formerly marshy, is the lowland of Waas. On the other hand, south of the Meuse begins the ascent, deeply gorge-cleft, to the plateau of the Ardennes. Thus to the north of the Scheldt and to south of the Meuse eastward and westward communications are impeded on the one hand by the waterways of the drained marshland, on the other by the rugged character of the valley-trenched upland. A passage remains, fifty miles broad between the two rivers, which lies open through a dry, though relatively low-lying plain, and this offers the only easy road from the Lower Rhine about Cologne westward into France. The way which is thus left is further defined by other physical features.

Where the Scheldt turns northward to Antwerp there enters the river Rupel, and this is in real-

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ity a tidal estuary to the point where the Nethe, Dyle and Senne tributaries unite, and it is held by high banks from flooding a belt of marsh on either hand. Eastward again of the Rupel and of Antwerp, as far as the Meuse north of Maastricht, is the sandy country of the Campine without supplies. On the other hand, towards the Meuse, the brink of the country of Hesbaye is cut by two or three small streams, which render difficult the road along the edge overlooking the Sambre-Meuse valley. Thus, in fact, the front upon which the armies have marched westward into France or eastward into Germany, is a narrow one. The Meuse must be crossed in the neighbourhood of Maastricht, the *trajectus* or ferry of the Romans, and the advance must be past Brussels, to the south of that place rather than to the north. The strategical significance of the long defile is complicated by the fact that whether from Antwerp, Bruges, Ostend, Dunkerque or Calais, the line of advance into Germany or into France is open to flank attack from England. As a result of these geographical circumstances we find the map of this little region sown over with the names of famous battles—Neerwinden, Ramillies, Fleurus, Ligny, Wavre, Quatre Bras, Waterloo, Jemappes, Maplaquet, Fontenoy and

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Oudenarde—and the towns hereabouts have stood many a famous siege. Not without relation also to this geography may have been the greatness of the family of Charlemagne, which originated in this region. Pippin, its founder, was born at Landen beside Neerwinden, west of the Meuse, and Japille and Herstatt on the Meuse itself just below Liège, are also names famous in the Carling annals. Aachen, the favourite residence of Charlemagne himself, lies only a little east of the Meuse.

The great roadway through Lower Lotharingia was important, however, not only in warfare but also in commerce. At Cologne the overland traffic from the Baltic joined the river-borne traffic from Italy and the Indies, and thence the combined traffic was carried westward into Flanders. The early prosperity of Ghent, Bruges, and the other cities of Flanders was due no doubt to the flax for their linens got from their own relatively infertile soil, and to the poverty of their crusading counts from whom were bought privileges of self government. But as they grew in wealth and required an increased base for the activities of their burghers, the Flemish cities came to owe more to the neighbourhood of England across the water, from which they drew their supplies of

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raw wool for the cloth industry, and certainly no less to their easy communications through Alost, Malines, Brussels, Louvain, Liège, Aachen, and Maastricht to Cologne, the Rhine, and the great world beyond.

In these modern times the relative importance of Flanders has yielded commercially to the advantages of Antwerp and the great estuary of the Scheldt, and industrially to the coal-field of the Sambre-Meuse and Upper Scheldt. This coal-field skirts the northern edge of the Ardennes plateau just as the similar coal-field east of the Rhine follows the northern edge of the plateau of the Westerwald. The two strips of carboniferous rocks lie, however, as it were in *échelon*, that to the right of the Rhine being in advance northward, so that it would appear that the angular entry of the lowland past Cologne as far as Bonn marks some great dislocation in the Rhenish plateau which has broken the continuity of the coal-fields, dividing them into East Rhenish and West Rhenish. The Western coal-field commences in the neighbourhood of Aachen just within Germany, follows the valley of the Meuse and Sambre from Liège by Namur to Charleroi, and then crosses Hainault by Mons and Valenciennes to Douay and Lens south of Lille, thus entering France. But there

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is a break in the coal-bearing strata between Liège and Namur, so that the industrial area is divided into two parts, the one Belgian and German about Liège and Aachen, the other Belgian and French from Charleroi to near Lille.

The effect of the vast development of industry along this line has been to divert the main road southward from the battle-strewn surface of Hesbaye to the Meuse valley itself, so that the traffic from Cologne to Paris keeps more closely than in former days to the very foot of the Ardennes. The divergence of the ways is at Aachen, whence on the one hand there runs the road towards Antwerp and Flanders, through relatively open ground by the ancient crossing at Maastricht, and on the other hand through a hilly country at first southward and then westward, the road to Liège, Namur, and France. This latter road is in fact carried through the border of the upland by the valley of the Vesdre, tributary to the Meuse at Liège. On a brink of this valley was the castle of Limburg, the seat of the dukes of that name, and a little further down is now a group of textile towns of which Verviers is the chief. Still lower, and nearer, therefore, to Liège, a small side valley enters at Pepinster, and up this, girt by the hills, is

THE LOWER MEUSE AND SCHELDT

the famous watering place of Spa, once the rival of Monte Carlo.

The western industrial field of Charleroi, Mons, and Valenciennes has an advantage not possessed by the eastern at Liège and Aachen. The divergency of the drainage from the source region of the Sambre, Scheldt, Somme, and Oise has permitted of a system of navigable ways, canals and canalized rivers, which radiate in all directions, and offer carriage for bulky cargoes to Ghent and Antwerp, to Paris, to Namur and Liège, and up the Meuse to Mezieres and Sedan. Whether we consider the commercial advantage of these inland ways, or that of the great estuarine way to Antwerp and Ghent, or whether, on the other hand, we reflect on the strategical influence of the Meuse and the Scheldt, it is evident that the rivers of Belgium, essentially tributaries of the Rhine system, have been among the most powerful directing causes in the history of the region.

Chapter Twelve

THE DELTA

THE Rhine map resembles in some sort the plan of a great tree. Having gathered waters from its tributaries, as it were the roots and rootlets penetrating the ground and drawing sap into the trunk, it parts into distributaries which traverse the delta, like tree branches which carry the moisture back into the air. The delta of the Rhine begins to-day just within the border of Holland, although two hundred years ago the division took place in Germany. From the time when Virgil described the Rhine as "two-horned," the prime division has undoubtedly been into two main distributaries, but apart from this fact everything has changed during the intervening centuries. The names of the complicated waters of Holland are so many monuments of its physical history. In this regard the ordinary map is so little intelligible and gives so little guidance as to the relative importance

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of the several estuaries, that it is worth while in the first place to describe with care the actual facts of the present.

The Rhine divides within the Dutch border into a greater channel to the left, known as the Waal, and a smaller channel to the right which bears the name of the Canal of Pannerden, from Pannerden the first village within Holland. Some ten miles up-stream, within Germany, is the point of former division, and from this place a dead channel, used in time of flood to carry the overflow, still runs north-westward as the Old Rhine, to join the Canal of Pannerden. From the junction of this Old Rhine with the Canal, the right hand stream takes the name of Neder Rijn or Lower Rhine, and approaches the sand hills on whose edge is placed the city of Arnheim. Just before reaching that place, however, a branch is thrown off to the north which is called the Ijssel, and this branch curving eastward and then northward round the sand hills of Veluwe enters the Zuider Zee or South Sea, midway along its east coast. The Zuider Zee connects with the North Sea principally by two openings, which are, therefore, Rhine mouths. On the one hand between the island of Texel and the peninsula of Holland there is a deep passage known

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as the Helder; on the other hand between the islands of Vlieland and Terschelling there is another deep passage known as the Vlie. The strait between Texel and Vlieland, however, is shallow, and the opening between Terschelling and the Frisian mainland is equally negligible for the same reason. We may, therefore, imagine the Ijssel branch of the Rhine as continued through the shoals of the Zuider Zee, past the town of Stavoren, and then bifurcating westward into the Texel Stroom and northward into the Vlie Stroom. Perhaps a ninth or a tenth of the Rhine water under normal conditions finds its way to the ocean by the Ijssel. There is a small stream, bearing the name of Old Ijssel, which flows parallel to the Rhine almost from Wesel in Germany, and enters the Ijssel a few miles east of Arnheim. It will be remembered that there is a somewhat similar channel parallel with the left bank of the Rhine which, under the name of Old Rhine, follows the foot of the Hill of Cleve and joins the main river a little below the opening of the Canal of Pannerden, but on the opposite side.

From Arnheim the Neder Rhine flows westward, with the sand hills of Veluwe, or Bad Island, along its right bank and the meadows of Betuwe, or Good

THE DELTA

Island, on its left bank. Even through the centre of Veluwe there is a depression known as the Eem, through which in flood time water may escape northward past Amersfoort to the Zuider Zee. Once clear of Veluwe the Neder Rhine needs the protection of high dykes on either hand, for it flows between meadows which are below the level of high river-water, although not as yet below that of high sea-water. At Wijk bij Duurstede, a small channel, to all appearance a mere canal, leaves the river on the right hand, the entry being protected by lock gates, but an inspection of its lie upon the map discloses the fact that it follows a devious course like that of a natural river rather than of a canal dug by human efforts. This little channel, through which a slow stream is allowed to flow, is called the Krumme Rijn, or Crooked Rhine, while the main river below the Wijk takes the name of Lek. The Krumme Rhine flows to Utrecht and there divides, one channel extending northward under the name of Vecht to the Zuider Zee, while the other extends westward past Leyden under the name of Old Rhine. The Vecht gives off a branch, the Amstel, which curving northwestward bends finally through the city of Amsterdam to join the Ij, a broad channel tributary to the

THE RHINE

Zuider Zee, midway along its west coast. The IJ has of late been separated from the Zuider Zee by a great dam and connected by means of the North Sea Canal with the open ocean beyond the westward dunes at IJmuiden. The Old Rhine, the other distributary which parts from the Grumme Rijn at Utrecht, is also carried westward through a passage in the dunes directly to the North Sea, but great gates have had to be constructed for the purpose of shutting out the high tide where this passage opens to the sea at Katwijk. When these gates are closed, the old Rijn, where it passes through the town of Leyden, is in fact a dead water. It carries to the sea during the year probably not more than one five-hundredth of the Rhine discharge.

The Waal, which receives at the Dutch boundary at least two-thirds of the Rhine water, forms the southern boundary of Betuwe, the island whose fertile meadows are saved from the river floods by high dykes on the left hand of the Neder Rhine and on the right hand of the Waal. The left bank, however, of the Waal, like the right bank of the Neder Rhine at Arnheim, is backed by firmer and higher ground continuous with the ridge which in the neighbouring Germany bears the town of Cleve. On the



NYMWEGEN.

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end of this ridge, along the south bank of the Waal, stands the town of Nijmegen, whose position is therefore complementary to that of Arnheim. Indeed the whole space occupied by the deltaic island of Betuwe between these two towns, is the natural passage way of the river. The breadth across from north to south is ten miles.

Though Nijmegen stands thus on solid and raised ground, the distance is only some five or six miles southward to the banks of another great river, the Meuse, which here bends from a northward to a westward direction. Some distance westward of Nijmegen and due south of the point where the Krumme Rhine leaves the Lek, the Meuse, or as it is in Dutch called the Maas, approaches the Waal so closely through the marshy land that only artificial works prevent a confluence of the two rivers. There is a navigable communication with lock gates, but the Maas is thrown off again in a south-westerly direction and rounds the island of Bommelerwaard, so that at present it combines its water with that of the Waal only opposite to Gorinchem some fifteen miles below their first near approach.

The Maas is, of course, a much smaller river than the Waal, for it brings down only about one-tenth as

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much water as flows through the Rhine channel where it enters Holland. None the less the name of Maas is applied to more than one of the estuaries through which the Lek and the Waal find their way to the North Sea. Just below Gorinchem the main flood of the combined Waal and Maas turns south-westward into a lake-like expansion, set with some sixty small islands, which bears the name of Biesbosch or the Reed Wood. The cleared channel through the amphibious intricacies of Biesbosch is no longer known as Waal but as the New Merwede. The waters then recombine into a majestic estuary two miles across, known as the Hollandsch Diep, across which is carried a railway bridge, the lowest on the Rhine, bearing the main line of railway from Antwerp to Rotterdam and Amsterdam. Then bending slightly to north-westward and doubling in breadth, the estuary for twenty miles becomes known as the Haringvliet. Finally the Haringvliet merges with the ocean with a channel so broad that the sand dunes are only just visible on either hand. Measured by the volume of its discharge, this is to-day by far the most important of the Rhine mouths. From the head of the Hollandsch Diep there is a tidal inlet along the south side of the Biesbosch which bears the



NYMEGEN.

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name of Old Maas, but this now fails to reach the Maas river because of high dykes and protected meadows intervening.

Where the Waal makes its south-westward bend under the name of New Merwede, a considerable channel, the Merwede proper, continues the westward direction of the Waal to the point where Dordrecht stands on its southern bank, and here again there is a bifurcation. One channel goes northward as the Noord to join the Lek, while another called the Old Maas runs westward along the southern edge of the meadow island of IJsselmonde. Along the northern edge of IJsselmonde the Lek, having been joined by the Noord, bears the name of New Maas, and under that name flows past Rotterdam. The Old Maas and the New join at the western point of IJsselmonde, and issue to the sea as the Brielle Maas, past the famous little town of Brielle, the home of the Water Beggars in the War of Independence. The main navigation is, however, now carried a little to the north by a direct artificial channel spoken of as the New Waterway, at whose mouth is the Hook of Holland.

Below Dordrecht there are two navigable passages southward from the Old Maas to the Hollandsch

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Diep and the Haringvliet, and beyond the Haringvliet there is the island of Goeree, separated from the mainland by the channel of Volkerak, which issues to the sea south of Goeree past the town of Brouwershaven, through the Brouwershavensche Gat. This gat marks the boundary between the provinces of South Holland and Zeeland, so that, including the island of Dordrecht, there are five considerable islands which belong to Holland in the narrow sense of the word. It has been proposed to unite these islands and to leave only two estuaries, the one the New Waterway of Rotterdam, the other the Brouwershavensche Gat. A large area would thus be reclaimed which is now covered by tidal channels.

South of the Hollandsch Diep the sandy country of the Campine which occupies the great bend of the Maas comes close to the water, the line of the solid ground being approximately marked by the towns of 'sHertogensbosch or Bois le Duc, Tilburg, Breda and Bergen op Zoom. The last named of these places stands on a hill which for Holland is of exceptional height, at the head of the estuary known as the East Scheldt. A tongue of islands of which the outermost is Schouwen and bears Prouwershaven, runs seaward from near Bergen op Zoom for twenty miles,



THE GROOTE KERK, DORDRECHT.



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dividing the Brouwershavensche Gat from the East Scheldt, but navigable channels connect the two estuaries. Finally, another tongue of islands known as Beveland and Walcheren, running seaward, separates the East from the West Scheldt. The main stream of the Scheldt issues through the Hont or West Scheldt and no longer past Bergen op Zoom through the East Scheldt. The southern shores of the Hont, though part of the mainland, belong to the Dutch province of Zeeland and not to Belgium, so that both banks of the mouth of the Flemish river are Dutch territory until within ten miles of Antwerp.

A study of these facts, and of historical records so far as they are extant, renders it probable that the Rhine mouths have moved westward and southward through a great distance in the course of historic times. It is said that the portion of the Ijssel of Gelders which lies between Arnheim and the junction from the south of the now diminutive Old Ijssel is in fact the canal which we are told was dug by Drusus in Roman times. The idea is that Ijssel was a separate river and that it was Dracus who first connected it with the Rhine. It is certain, however, that the deposits along the Ijssel valley

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are of Rhine alluvium, and the same is true even of the shallow depression through which the Old IJssel flows before it leaves Germany. It would appear, therefore, likely that the IJssel is in fact the natural mouth of the Rhine, the direction of whose course from Bingen to Wesel it continues to the Zuider Zee. If this be so, the original mouths of the Rhine may have been at the Helder and through the Vlie Stroom, for within historic times Vlieland and Texel were a single island. It is even possible, nay probable, that the IJssel Rhine at a still earlier time traversed the present province of Friesland and entered the sea at the inlet known as the Lauwers Zee, for a long depression, now drained, called the Middle Sea, formerly divided Friesland into Westergo and Oostergo, and this depression is said to have carried the IJssel to the sea past Sneek and Leeuwarden. It is at any rate certain that in Roman times, and for long after, the present exit from the Zuider Zee to the ocean was either much smaller or non-existent. The southern end of the great lagoon then apparently bore the name of the Lacus Flevo.

In Roman times the frontier of the Empire followed the Krumme Rhine and the Old Rhine past the Trajectus or crossing now marked by Utrecht,



DORDRECHT: THE FISHMARKET.

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and past the dune in the midst of the marshes where still rises above the general level the city of Leyden or as it was called Lugdunum. This would seem to indicate that the Old Rhine was an important, if not the most important, channel, as late as in the times of the Roman Empire. The explanation of the so-called estuaries of the Maas further southward thus becomes easy. The Rhine has robbed them successively from the Maas.

It is likely that the whole of this great westward swing of the lower course of the Rhine through a distance of more than sixty miles was effected naturally by the agency of the tides. The Rhine delta is placed where the oceanic tide can approach by two distinct channels, on the one hand southward round the North of Scotland, and on the other hand eastward up the English Channel. The tidal waves "interfere" with one another off the coast of the Netherlands in such manner that high tide in the south is heaped upon high tide, whereas in the north the high water of the North Sea is nearly neutralized by the low water of the Channel side. Thus the difference between high and low water at the Helder is small, but it is great at Flushing at the mouth of the Scheldt. The effect of this contrast is felt at the head of the

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delta, for where the river divides there is the steeper descent during the time of low water by the left-hand branch, and therefore a constant tendency for the greater part of the water to adopt that passage. The higher level of the southern high tide does not compensate for this action, partly because the chief outflow of fresh water is naturally during the ebb, when there is no counteracting upward current, and partly because the duration of the ebb in the estuaries is much longer than that of the flood tide.

Regarded, then, broadly, the deltaic portion of the Rhine basin consists of two districts of sand hills, the Campine in the south and the Veluwe in the north, and sunk between these of a flood plain some ten miles broad. The two chief branches of the river are now held by dykes to either edge of this flood plain along the foot of the sand hills, and the alluvium between them has been converted into the long meadow island of Betuwe or Batavia. Once clear of the sand hills the river branches spread northward and southward over a belt of marshy ground with many peat bogs, whose surface is below the level of high tide in the sea. This marshy belt is separated from the salt waters by a line of sand-dunes swept up by the prevalent west winds from the sloping foreshore, and these

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dunes give the characteristic outline to the coast of this part of Europe.

Four sections of the dune-coast may be recognized. There is first the unbroken line of dunes from the chalk cliffs by Calais eastward to beyond Ostend. These edge the flat country of Flanders, raised a little above the sea level. Then in the second section we come to the group of the Rhine, Maas, and Scheldt estuaries, divided by long islands at right angles to the coast, whose ends where they come to the sea bear a wall of sand dunes. In other words, the dune-line is here cleft by a series of broad openings, and the dunes protect the seaward ends of the low islands of Zeeland reclaimed with much toil from the shifting sands of the estuarine waters. In the third section we come to a belt of dunes which, with only one break, extends from the Hook of Holland to the Helder. The break is towards the north, just beyond the high dune of Camperdown, and here, protecting the land within, is a great dyke across the breach. Holland is the land behind the dunes of this part, which resemble in their unbroken character the Flemish dunes, but Holland, unlike Flanders, is below high water level. In Holland, therefore, the dying estuary of the Old Rhine formerly made wide

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lagoons, for the small scour of the outflowing current was unable to contend during periods of drought with the sands blown up by the winds from the sea. Lastly, in the fourth section, we come to a part of the belt of dunes which is placed like the dunes of Zeeland upon islands, but upon islands of a quite different character, whose length runs parallel to the general trend of the coast and not at right angles to it. In rear of these dune-islands is a continuous channel of tidal flats to which access is obtained through straits here and there penetrating the dunes. The mainland beyond these tidal flats, or Watten, is known as Friesland. It is partly within the modern kingdom of the Netherlands and partly within Germany. Thus Flanders, Zeeland, Holland, and Friesland are four natural regions with contrasted characteristics, and they are inhabited to-day by four peoples, all belonging to the Low German or Saxon race but speaking distinct dialects.

The most important physical event in Dutch history was undoubtedly the formation of the Zuider Zee in the thirteenth and fourteenth centuries. At this time the Abbey of Egmont and other religious houses were busy endyking and draining the lagoons in rear of the dunes of Holland, with the result that

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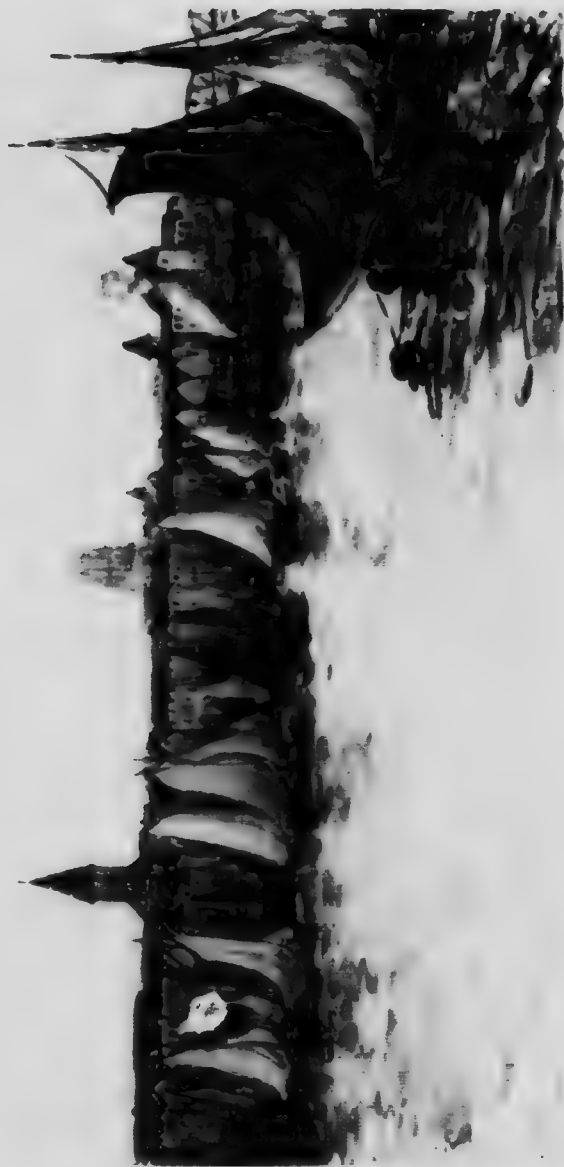
they concentrated the strength of the flood waters on neighbouring lands immediately eastward. A series of disasters ensued which the river floods and the tides and waves of the sea co-operated, so that a broad passage was made inland to Lake Flevo, and Friesland was divided into two parts widely sundered. There is still a section of the Frisian race inhabiting that tongue of the province of North Holland which projects eastward between the towns of Hoorn, Enkhuizen, and Medemblik, and in this district many of the peasants continue to talk the Frisian patois in addition to literary Dutch. The result of these great physical changes, spread apparently over the period of a century or more, was to convert Holland for the first time into the familiar peninsula of the maps.

In Roman times it would seem that the people of the Rhine delta belonged to two races. Along the coastal dunes and on the estuarine islands were Frisian fishermen. Further inland, on the other hand, on the edges of the Campine and the Veluwe, and the Landes east of the Ijssel or Sala, were Frank peasants of the Salic race. The place names mentioned in the Salic Law of Inheritance are scattered over the modern province of Overijssel, the land, that is to say, beyond

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the Ijssel or Sala. With the formation of the Zuider Zee the Frisian influence in the land which is now properly called Holland gradually diminished before Frankish advances from the south. East of the Zuider Zee, however, a third German tribe, the Saxons, intruded through Overijssel to the shores of the Zuider Zee, thus occupying the original Frank land, and the people on this side of Holland now speak a Saxon dialect. There may, however, be still other complexities in the derivation of the Dutch race, for it is recorded that in Roman times the Batavii, who inhabited the Betuwe, were derived from South Germany, and in the Campine and in Flanders there seem to have remained Belgic, that is to say partially Gallic, influences, some expression of which may perhaps be found in the predominantly Roman Catholic faith of the people, not only of Belgium, but also of that part of Holland which lies on the mainland south of the Maas.

The original Holland was a certain Holtland or Houtland, in other words a woodland, a limited district in the neighbourhood of Dordrecht, evidently of a somewhat exceptional character in the midst of marshes which were no doubt as a rule treeless. Here during the break-up of the Carling Empire a County



ROTTERDAM

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was established similar to the Counties and Duchies of Flanders, Brabant and Namur on the southern mainland, although no doubt in the first instance of a more humble character. In the neighbouring town of Utrecht of Roman origin there was founded a Bishopric of the province of Cologne. From these two centres, the County of Holland and the Bishopric of Utrecht, were developed the administrative powers which gradually made Holland a part of the political and ecclesiastical system of the German realm. The Frieslanders, however, retained their independent republican institutions. A relic of these times may be found in the full name of The Hague—'sGrafens Haag, the Count's Hague, just as in a similar way on the borders of the Campine in the province of North Brabant, the Dutch portion of the old Duchy of Brabant, we have 'sHertogensbosch, the Duke's Wood.

The two districts of sandy ground to north and south of the Betuwe Island were annexed by the mainland authorities and formed no part of the deltaic system proper. The Duke of Gelders obtained the Veluwe, and the Duke of Brabant the Campine, but the Bishop of Utrecht came to own the outlying territory of Overijssel, "beyond the

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Ijssel," to which doubtless his access was mainly by boat across the Zuider Zee. The islands of Zeeland formed a separate County.

The first wealth of Holland seems to have been obtained from the waters; by the supply of fish to the great industrial cities of Flanders and by a local carrying trade to their harbours. The downward Rhine trade for the most part left the river at Cologne to pass overland into Flanders, or on the other hand north-eastward to the Baltic, for in addition to practical difficulties of navigation in the unregulated delta, the Frisian fishermen were beyond a doubt not averse to a little piracy.

The rapid growth of the Netherlands took place in the beginning of the modern times, precisely when the rise of absolute and centralized monarchies in France and Spain crushed the local privileges and local initiative of the Flemish cities on the mainland. The extraordinary relative power which was speedily developed by the people of this little Rhine Delta was due to a combination of many circumstances. The tradition of the free Frisian institutions may have counted for something. The discipline maintained by the necessity of an ever-ready organization and industry in the battle with the waters probably

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counted for more. But beyond these moral and historical accidents were great material and strategical advantages. In the days before the use of coal for the generation of power Holland was able to base her industry on the winds from the ocean which blow over the flat surface of her country with a greater steadiness than over land of more varied configuration or of inland position. The frequent tilt of the trees in Dutch landscapes is an indication of this fact. Moreover, in the days before macadamized roads and railways Holland possessed in her extraordinary network of waterways a system of communications reaching to every field of her farms. Thus Dutch civilization was based on windmills and sailing barges, the familiar properties of the Dutch artist. The windmills were used, it must be remembered, for many purposes, among others for pumping water from the low-lying "polders," as are called the reclaimed and cultivated bottoms of the marshy lagoons. For fuel there was the peat which paves with a springy carpet probably one half of Holland proper. When the express trains from Rotterdam to Amsterdam pass through the wayside stations, the spectator on the platform feels the ground undulate, and realizes that he and all the structures around are

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in reality afloat upon peat. But for more extensive structures, for the building of cities and for the construction of wharves, Holland had available the resources of half a continent. Myriads of trees were floated down the Rhine to be driven into the ground as piles for the foundation of the Dutch buildings. The stone for the lock gates and wharves was got from Overijssel, where great boulders from Norway had been scattered over the surface by the retiring glaciers of the Ice Age. In later times, of course, granite was brought direct from Norway in ships. Dutch agriculture gradually became more important than fishing; and for this Holland had her alluvial soil, whose particles were derived from all parts of the Rhine basin and possessed, therefore, that due and intimate admixture of lime, sand, and clay needful for the highest fertility, which is the general source of deltaic wealth.

Holland, moreover, was a natural fortress of peculiar effect in the days before the most recent artillery and engineering. To the west is an unbroken coastline with a shoaling sandy foreshore exposed to the west winds and offering neither shelter nor, except for the smallest boats, near approach. To the south are ranged, trench within trench, broad tidal estu-



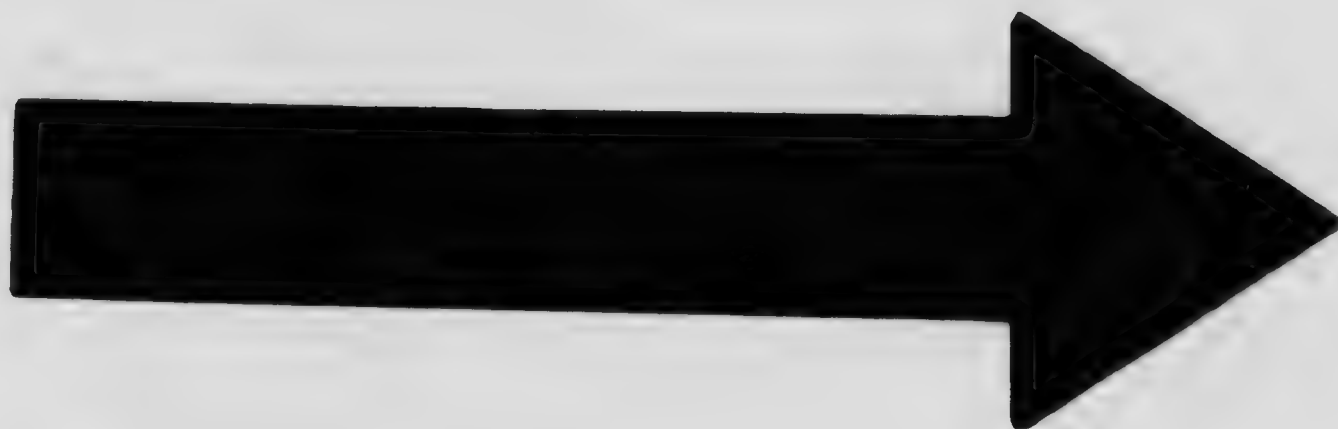
BOATS ON THE MAAS



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aries, Maas, Waal, and Lek. To the east is the shallow Zuider Zee, with intricate channels from which the buoys can be removed. There remains only the space between the Zuider Zee and the Lek, north and south of the city of Utrecht, but here along the Krumme Rhine and the Vecht a belt of country can be drowned at will under a sheet of water which is not deep enough on the meadows for the floating of ships, and too deep over the hidden ditches for the fording of men and horses. Only in the rare periods of prolonged frost does Holland become to some extent a part of the mainland.

In such a position the Dutch were able to hold their own even in the presence of the great military monarchies of the sixteenth and seventeenth centuries. Being relatively safe at home, they were free to enter upon a policy of enterprise over the seas and to bring back the wealth which was needful as an increased material basis for their prolonged resistance to European tyranny. To-day, when industry and dense population are usually based on underground resources, the purely agricultural soil of North and South Holland, and the commerce over the seas, sustain a population of some seven hundred to the square mile, three times the density, that is to say,



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of the population of the more agricultural parts of England. But in the Veluwe and in the Campine, on the landward borders of the country, there are still large areas which are scarcely inhabited, and until the advent of railways Holland remained socially apart from her neighbours on the mainland. In the eighteenth century, however, she became accessible to more modern methods of warfare and was submerged in the French Empire, for the Rhine delta is placed opposite to the estuary of the Thames, and whereas Napoleon could rest satisfied with alliances and suzerainties in most of Germany east of the Rhine, he was obliged along the coast to cross the Rhine frontier in order to prepare war against Britain and to enforce his Continental system by excluding her commerce.

When the great war was over, Europe constructed a Kingdom of the Netherlands, which included the present Holland and Belgium. Once before in history these territories had been united under the House of Burgundy, but when the rights of that House had been inherited by the Hapsburgs, and the Netherlands had been merged with Austria and Spain in a vast discontinuous Empire, the distinctions of race between the people of the delta and the people of the

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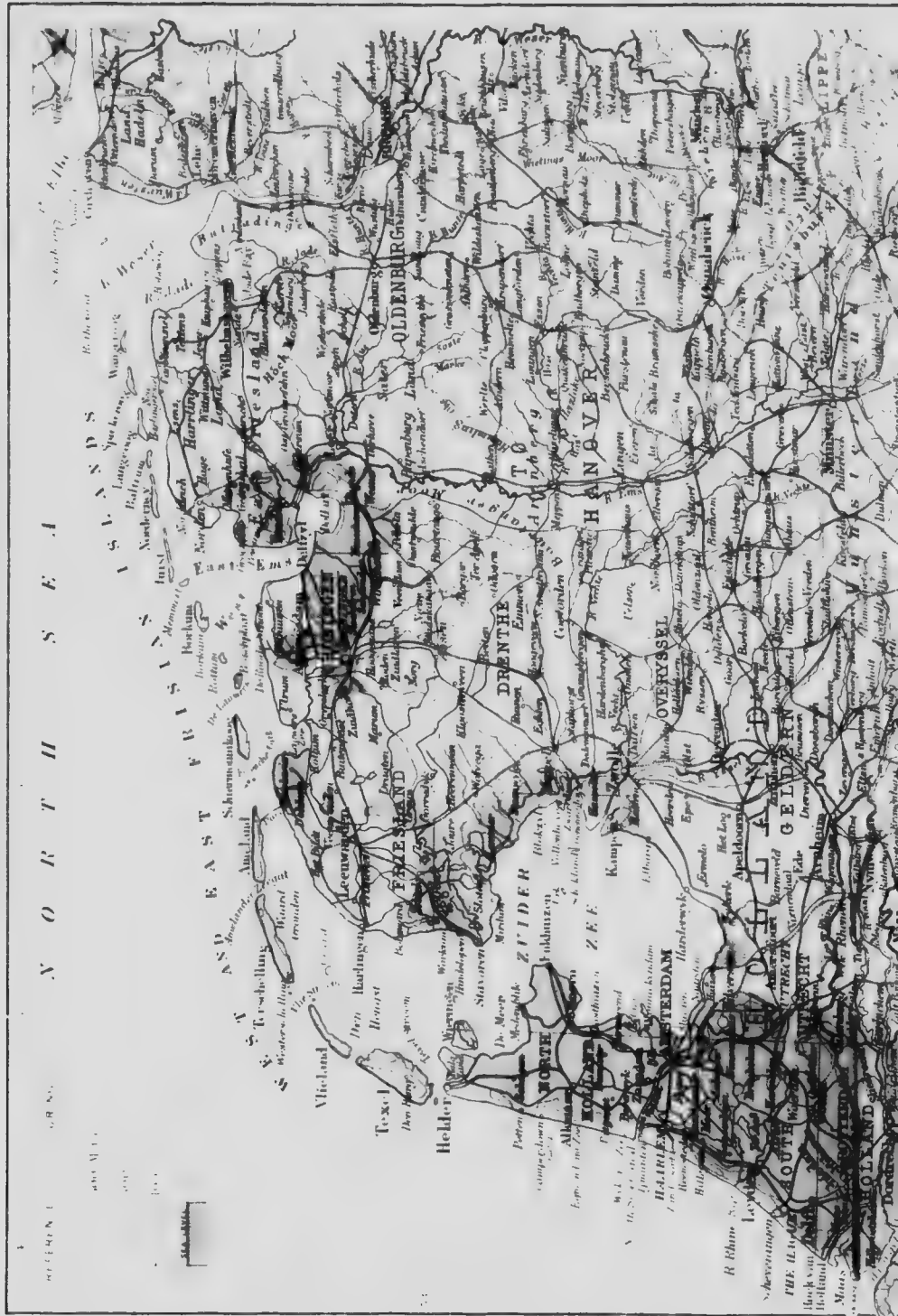
southward mainland were made evident in the different character of their resistance to the despot. This moral difference was, of course, reinforced by the strategical advantages and disadvantages of the several districts. As a result of the contest the two populations were sorted out more effectively than ever before, and the pre-existing contrast was emphasized and stereotyped. The Protestants were excluded from the Southern Netherlands, and although they were not wholly excluded from some parts of the Northern Netherlands, yet they lost all their influence there. In 1814 Europe did not reckon with the persistence of this historical momentum, and in 1830 the work of union was undone, and the Netherlands of the delta and of the mainland were separated once more. Since that time have come the great development of Belgian industry and the increase in some degree of Belgian power. Moreover, Germany to the east has been united and the rivalries of the great neighbouring Powers, Germany, France, and Britain, have been accentuated. It may well be that, had the Dutch and the Belgians maintained their union to the present day, they would not now have separated, and the wisdom of Europe might have been vindicated.

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Holland is the gift of the Rhine, just as Egypt is of the Nile. Napoleon held that Holland was rightly his because he had conquered Switzerland, and from the Swiss mountains is derived the Dutch soil. The advantages of the deltaic position are no doubt relatively less important to Holland in these days than formerly. Her oceanic shipping no longer makes use of the Zuider Zee. An artificial harbour has had to be constructed at IJmuiden on the open coast, and even for Rotterdam an outport has been established at the Hook of Holland. Rotterdam, and especially Amsterdam, are in some degree instances of what may be described as geographical momentum. They became great because of physical advantages which no longer tell with full force; but being already great, they have the need and also the resources to maintain their position. To-day, as always, Holland and Belgium present vital political problems to Europe—Holland in respect of the commercial rivalry between Germany and Britain, Belgium in respect of the military rivalry between France and Germany. The two problems may be said in some sense to pivot on Cologne. Thence lies the great waterway northward to the Dutch ports; thence also lies the landway westward which passes into the French plain, necessarily

THE RHINE BASIN—Northern Part.

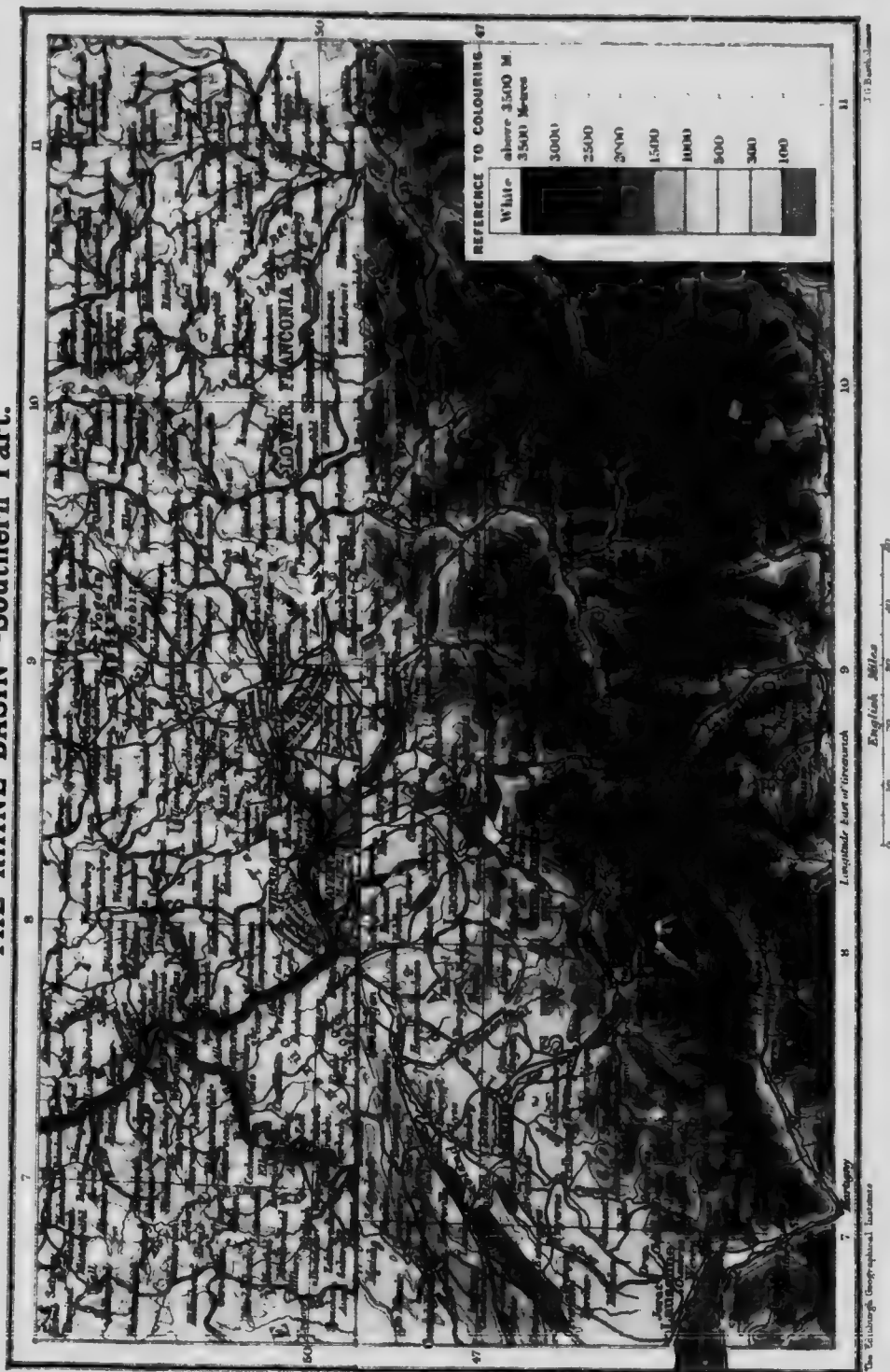
THE RHINE BASIN Northern Part.





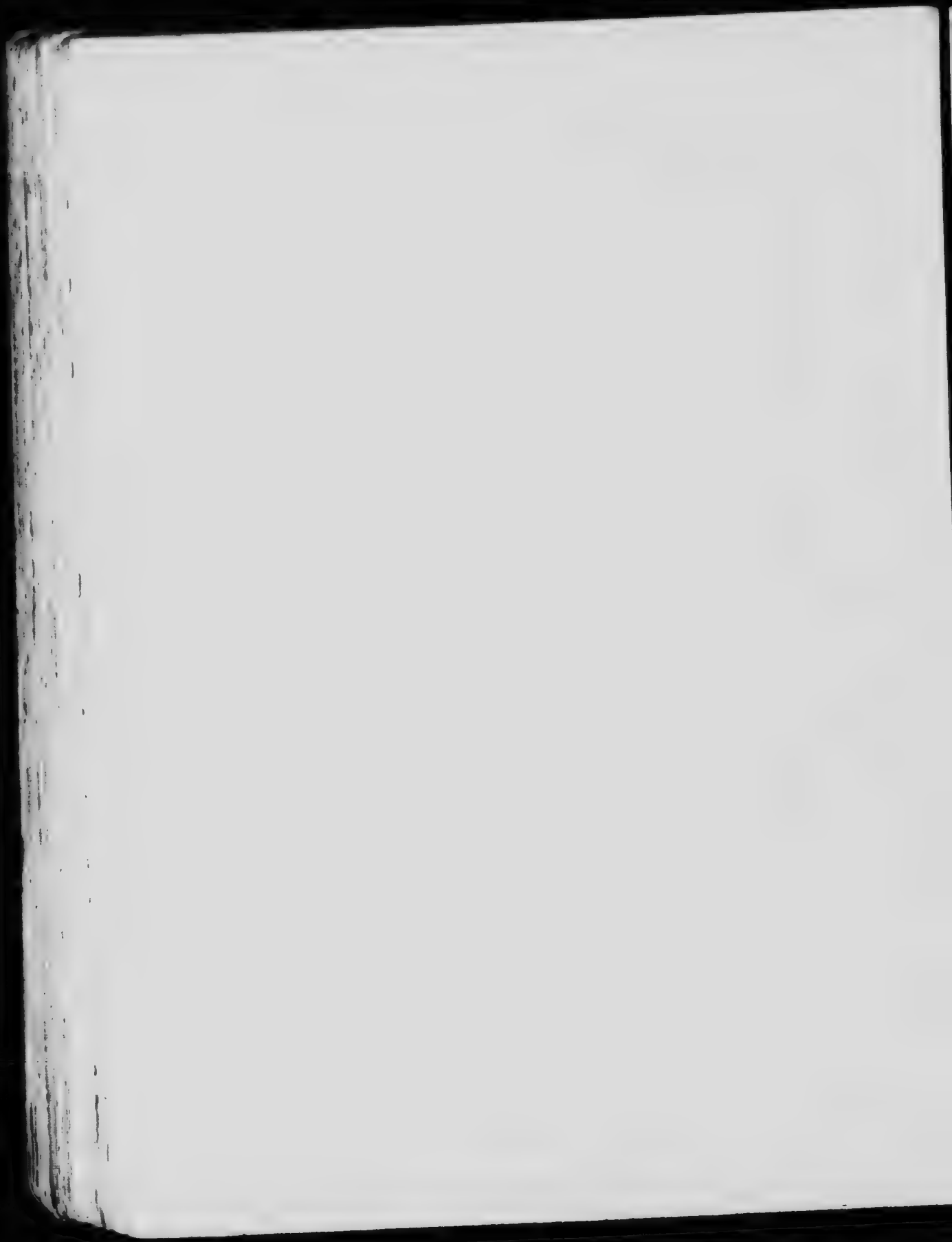


THE RHINE BASIN—Southern Part.



This is a detailed historical map of the Southern Part of the Rhine Basin. The map shows the extensive Rhine River system, including the Main, Moselle, and Neckar rivers. Major cities and towns are marked, such as Cologne, Bonn, Frankfurt, and Wiesbaden. The map also depicts the surrounding regions, including Lower Franconia, Middle Franconia, and the Palatinate. The map is oriented with North at the top, and the Rhine River flows from the north towards the south. The map is a black and white reproduction of a historical document, showing the intricate details of the river network and the surrounding landscape.





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through the narrow interval between the marshes and the hills, between Antwerp and Liège.

Thus we complete our survey of the Rhine and the Rhine Basin. May we not now say deliberately that the Rhine is unique among the rivers of Europe in its influence upon history? Whether we consider the Swiss Republic established in the Alpine valleys of the source, or the Dutch Republic entrenched within the deltaic islands by the sea, or whether we pass in review the cities of the middle course—Basle, Strasbourg, Mainz, Coblenz and Cologne, strategical centres in the secular struggle between the Teutonic East and the Latin West—our conclusion must be the same. The Volga and the Danube are greater streams, and the Tiber, the Seine and the Thames are metropolitan streams, but none of them, not even the Danube, has the complex interest of the Rhine—Swiss, Dutch and Franco-German. On the whole, moreover, there is no European river which can compare with the Rhine for continuous scenic interest.

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